AGRARIAN CHANGE IN WESTERN IRĀN:
A CASE STUDY OF OLYĀ SUB-DISTRICT

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"..... I hope that in under-developed countries young people will not waste time discussing "the peasant", or sit in offices computing the size of their surplus populations, but will walk through the villages and see farms and talk to farmers, to learn what can be done about farm poverty."

D. Warriner, April 1963
(in Warriner, D. "Economics of peasant farming", page xxxiv, 1964)

ABSTRACT

This thesis is concerned with agrarian change in eleven villages in Olyā sub-district, western Irān, during the period 1962-1974. The thesis begins by setting out the principle hypotheses and discusses the selection of the study area. The physical features of Olyā and the bearing they have on agriculture are then described. Chapter Three examines the land reform laws and the part they played in agrarian change. Chapter Four first describes the improvements made in the irrigation system and goes on to investigate the changes in land use and the cropping pattern made by the farm population since the eve of land reform. Social and economic changes are then systematically examined. Chapter Six discusses the institutions and services which may be included under the heading "supporting system" and their relevance for rural development. Finally, a series of case studies of seven small-holders and one former landlord is presented as the "human evidence" upon which the arguments of this thesis have been based.

The study reveals that the progress made by the farm population in Olyā during the first decade of land reform is presently being jeopardised by the re-direction of government policy with regard to agricultural development since 1968; in particular, the likely location of a farm corporation in Olyā has created much uncertainty which threatens the continued welfare of the rural population.

An explanation of the methods by which I collected data in Olyā during the period 1972-74 is given as an appendix. The last part of the thesis reviews the literature on agriculture in economic development in Irān and presents a bibliography.

ACKNOWLEDGEMENTS

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Irānian calendar		Gregorian calendar	
1352		1973	
Farvardin	1	March	21
	31	April	20
Ordibehesht	1	April	21
	31	May	21
Khordād	1	May	22
	31	June	21
Tir	1	June	22
	31	July	22
Mordād	1	July	23
	31	August	22
Shahrivar	1	August	23
	31	September	22
Mehr	1	September	23
	30	October	22
Ābān	1	October	23
	30	November	21
Āzar	1	November	22
	30	December	21
Dei	1	December	22
		1974	
Dei	30	January	20
Bahman	1	January	21
	30	February	19
Esfand	1	February	20
	29/30	March	20

Note: There are 31 days in each of the first six months of the Irānian calendar, 30 days in each of the next five months and 29 days in the last month, except in leap years when it has 30 days.

ABBREVIATIONS

a.s.l.	=	above sea level
cumecs.	=	cubic metres per second
F.A.O.	=	Food and Agriculture Organisation
ha.	=	hectares
j.	=	jarib
kgs.	=	kilogrammes
kms.	=	kilometres
l.	=	litres
no.	=	number
rls.	=	rials
sec.	=	second
sq.m.	=	square metres

CURRENCY

The official unit of currency in Iran is the rial. The term toman, while not in official use, is commonly employed to designate 10 rials. 167 rials was equivalent to £1 sterling in August 1973 (154 rials in August 1975).

NOTE ON TRANSLITERATION

اَ عَ ءَ	a	as in	pat
اِ عِ ءِ	e		index
اُ عُ ءُ	o		pull
اَو	ow		low
آ عا ا ی	ā		garden
ای ئی عی	i		peel
آی	ei		day
او	u		boot
ع وهمزه ساکن	'		Ja'farābād
ق درمیان وآخر	q		Qom
غ	gh		Marāgheh
ش	sh		show
چ	ch		change
خ	kh		Kharaqān
ج	j		Japan
ژ	zh		pleasure
گ	g		guest
ه ح	h		horn
د	d		dash
ز ذ ض ظ	z		zone
ر	r		rail
س ث ص	s		sad
ت ط	t		table
پ	p		park
ب	b		bad
ی	y		year
و	v		value
ک	k		kind
ل	l		long
م	m		mad
ن	n		noise
ف	f		far

The system of transliteration used is, with some modifications, that adopted by the Statistical Centre of Irān in its Village Gazetteers. No distinction is made between Persian letters which are pronounced alike, such as ز , ذ، ض, and ظ. The ezāfeh is shown by -e and by -ye after ā and u.

CHAPTER ONE INTRODUCTION

1.1. AIMS AND HYPOTHESES

Events have shown that during the period 1962-1974 Olyā sub-district has witnessed perhaps the greatest agrarian changes in its history. These changes may be accounted for by a number of inter-related factors. In particular, the commencement of land reform in January 1962 may be seen as the starting point and pre-requisite of other changes. The land reform laws of 1962 and 1964 brought about extensive changes in the ownership of land and relationship of landlord and share-cropper (see Chapter 3)[1]. The result was the possibility and the incentive for the new small-holder to work more and work more effectively to raise yields, and to put his resouces - in the first place his own labour - into improving the land. He was also able to experiment with new crops and new methods of husbandry, which had not been permitted under the old landlord regime (see Chapter 4.2. and 5.2.). Moreover, the reforms revolutionized the values and aspirations of the small-holder, who began to feel that his voice counted for something and to take a greater interest in his land and his village. Without these institutional reforms rural development could not have occurred.

The first phase of land reform laid down that agricultural extension services should be provided in the villages that were transferred to the share-croppers. In Olyā extension officials were very thin on the ground in the early sixties and, furthermore, as much involved with land reform work as with agricultural extension. However, considerable effort was expended on animal vaccination and the distribution of new, improved wheat seed. This was helped by the creation of an agricultural extension corps in Irān in 1964

1. Lambton, A.K.S. "The Persian land reform, 1962-1966" (1969a)

(see Chapter 6.2.). Nevertheless, in 1970, when the eleven villages under detailed study were designated a Pilot Villages Project (see section 6.2.3.), there were only two extension agents in the villages and by 1973 still only five agents, who represented the total commitment to the seventy villages of Olyā sub-district. This emphasis on agricultural extension work in a concentrated area was purposely made in order to be first more effective and therefore an example to the whole district, and secondly to demonstrate the self-help principle of agricultural extension as a supplementary aid to rural development and complement to land reform. I shall suggest that agricultural extension can only be successful if made predominantly through the agency of the inhabitants themselves and that this should be recognised by the planners in Tehrān[1].

The Land Reform Organisation also intended that co-operative societies should play a key role in rural development by taking the place of the landowners in villages transferred to the share-croppers. Membership of a co-operative society was a condition to the receipt of land. The co-operatives in Olyā intended initially to provide the small-holders with short-term credit, which was welcomed by the villagers as the means to reduce their two main problems of indebtedness and the foreselling of crops. The co-operatives were seen by the villagers as a means to establish their social and economic independence by introducing training in responsibility, the practice of co-operation at the local level, and adequate credit[2]. The subsequent ability of the societies to increase their activities

1. Warriner, D. "Economics of peasant farming", page xxxii (1964)
2. Lambton, A.K.S. "Land reform and rural co-operative societies in Persia", Journal of the Royal Central Asian Society, page 247 (October, 1969b)

on broader lines, such as the sale of oil products, consumer goods and fertiliser, proved of great benefit to the villagers, whether or not members of the societies.

Finally, it should be emphasized that agrarian change cannot be regarded in isolation. The period 1962-1974 has been one of rapid economic development in Irān, as a result in particular of the growth in revenue from oil exports, which has had a major effect on society. Increased government expenditure has contributed to agrarian change in rural Olyā in a number of important ways. First, there has been a considerable improvement in communications and the provision of cheap transport, which has stimulated the exchange of goods and ideas between the villages and the surrounding urban centres and given the rural population greater access to opportunities for non-agricultural employment and education. Secondly, the irrigation system has received substantial investment to improve reticulation and reduce the wastage of water, thereby encouraging the more intensive use of the land. Thirdly, a major effort to improve the social services and amenities in the villages has been made; new schools, piped drinking water systems, rural cultural centres and a clinic have been built with government financial assistance. Fourthly, the number of alternative employment opportunities, especially in the service sector, has grown. Fifthly, the demand for food produce in both neighbouring and distant centres has increased rapidly, so that there is now a market for all surplus production. Lastly, the availability of new consumer goods and farm imputs, the radio, and the appearance of a much more affluent urban class have profoundly affected the aspirations of the rural population, especially the younger generation, for its future.

Just as the first two stages of land reform may be seen as having initiated change in Olyā, so, paradoxically, the first step of the third stage of reform, passed by the government in 1968

(see sections 3.2. and 3.3.), has begun to impede progress in the last few years. The mere rumour of an intention to set up a farm corporation in Olyā in 1973, following the establishment of the Arān farm corporation at the other end of the Nahāvand valley (see Figure 11), was sufficient to give rise to an air of uncertainty, which involved even the landlord class, and was showing itself in a more cautious attitude towards investment. Moreover, it will be shown that in other ways, notably the inadequate provision of credit and the loss of direction of the co-operatives, government policy in the last few years has had a debilitating effect on rural development for the small-holders of Olyā.

It is the contention of this thesis that at the present time there would seem to be a strong case for delaying any measures which will destroy the confidence of the population living from the land, however desirable such measures may be in themselves. In such a district as the river valley of Olyā, where land and water resources are of well above average value, and where the small-holders have proved their ability to develop these resources intensively, general hostility to a farm corporation is hardly surprising. Indeed, the establishment of a farm corporation would surely be a retrograde step and would adversely affect the whole social and economic structure that has emerged since land reform. In dry-farming districts, where land has little value and the farmers are forced to make agreements with tractor owners and others for its cultivation, the proposed corporations might have a valid function[1]. It is easy for critics to point to shortcomings and failures in Olyā; no-one would deny that there is still much to be done and many difficulties to be overcome, but the overall picture is of a countryside stirring to new life and inspired by a spirit of self-confidence and enterprise.

1. Lambton, A.K.S., page 359 (1969a)

1.2. THE STUDY AREA

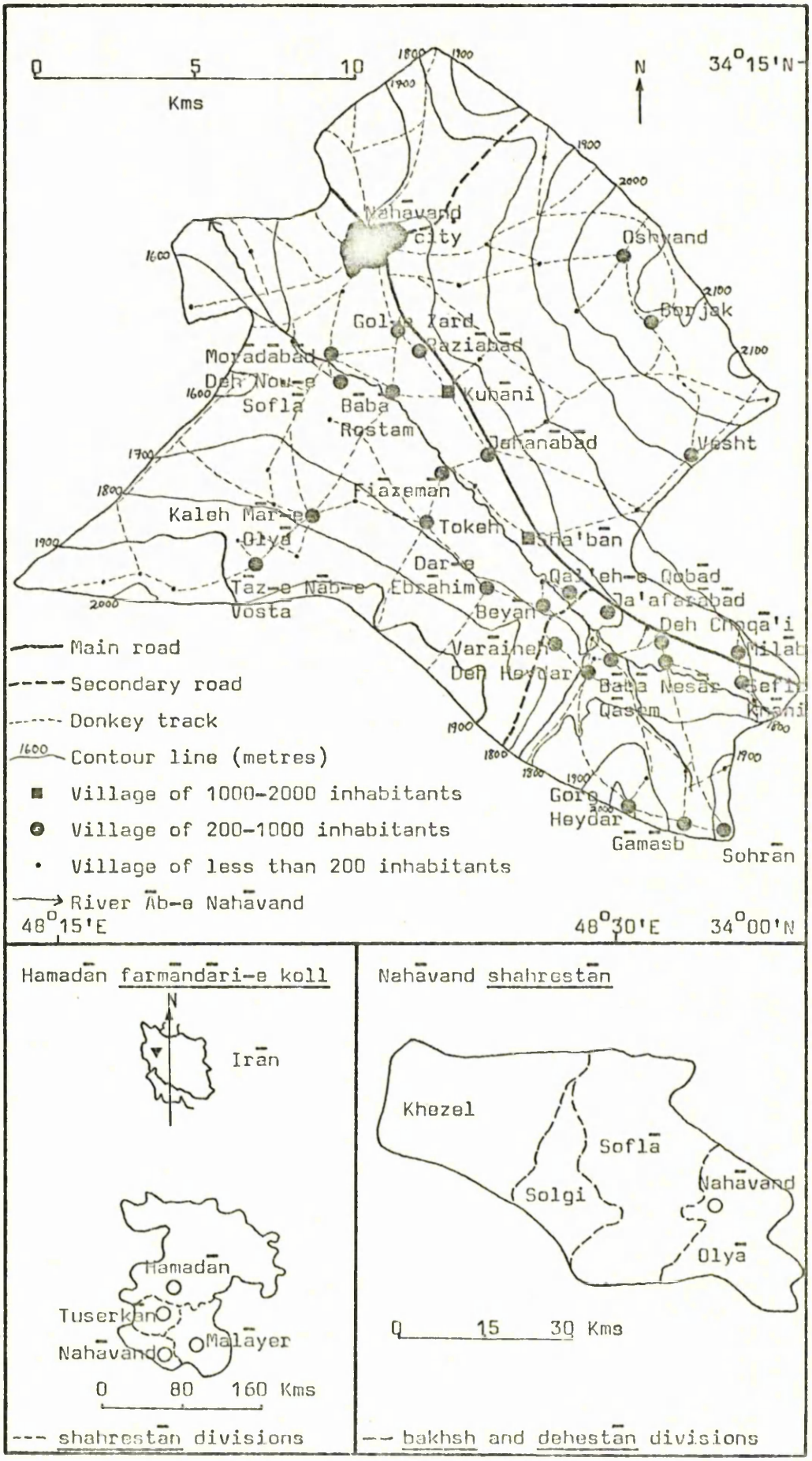
The sub-district (dehestān) of Olyā is in the central Zagros mountains on latitude 34°, 150 kilometres by asphalted road south of Hamadān (see Figure 1). It forms the eastern extremity of the four administrative divisions of Nahāvand district (shahrestān), which is part of Hamadān province. Apart from the political and economic centre of Nahāvand city, which had a population of 23,922 according to the 1966 census, Olyā contains 70 villages and hamlets with a total population of about 20,000[1].

Olyā lies across the upper valley of the river Gāmāsiāb, known locally as the Āb-e Nahāvand, which has its source at a spring off the main valley to the south and into which a number of small streams flow, the most important being the Kharchang Rud. The valley is hemmed in by two ranges of the Zagros mountain chain running parallel to each other in a north-west, south-east direction. The mountains rise to over 2,500 metres at Kuh-e Sefid in the north and reach 3,000 metres in the southerly Qarin (Kuh-e Qaru) range (see Plate 1). The river valley falls smoothly from over 1,800 metres in the extreme south-east near the village of Milāb to 1,600 metres in the north-west near Nahāvand city, a distance of some 17 kilometres. An intricate network of irrigation canals from especially the Āb-e Nahāvand stretches along both sides of the valley and provides about half the villages of Olyā and the city with a reliable supply of water for agriculture (see Chapter 4.1.).

From archaeological evidence uncovered at Tappeh-e Bābā Qāsem, Nahāvand city and at Tappeh-e Giyān in nearby Soflā sub-district, it seems that the Gāmāsiāb valley was the site of early settlement and agricultural exploitation, extending back to the

1. Irān Statistical Centre. "Village gazetteer of Hamadān and Ilām", (1969). Refer to Appendix 2.

Figure 1 Olyā sub-district



Source: Irān Statistical Centre

Plate 1 Nahāvand city, looking south-eastwards towards the Qarin mountains and the study area.

Plate 2 Aerial view of the main valley of Olyā from the foothills of the Qarin mountains. The open fields of wheat and beans, the wooded course of the river Āb-e Nahāvand and the northern limits of irrigation following the Sha'bān canal stand out clearly.

fourth millenium B.C.[1]. Before Alexander the Great destroyed Nahāvand in 331 B.C., it was one of the eight major cities of Irān, situated on the "silk route"[2]. However, no precise date can be put on the origin of the individual villages in Olyā, nor on the construction of the irrigation canals which made possible an increased density of population and intensity of cultivation.

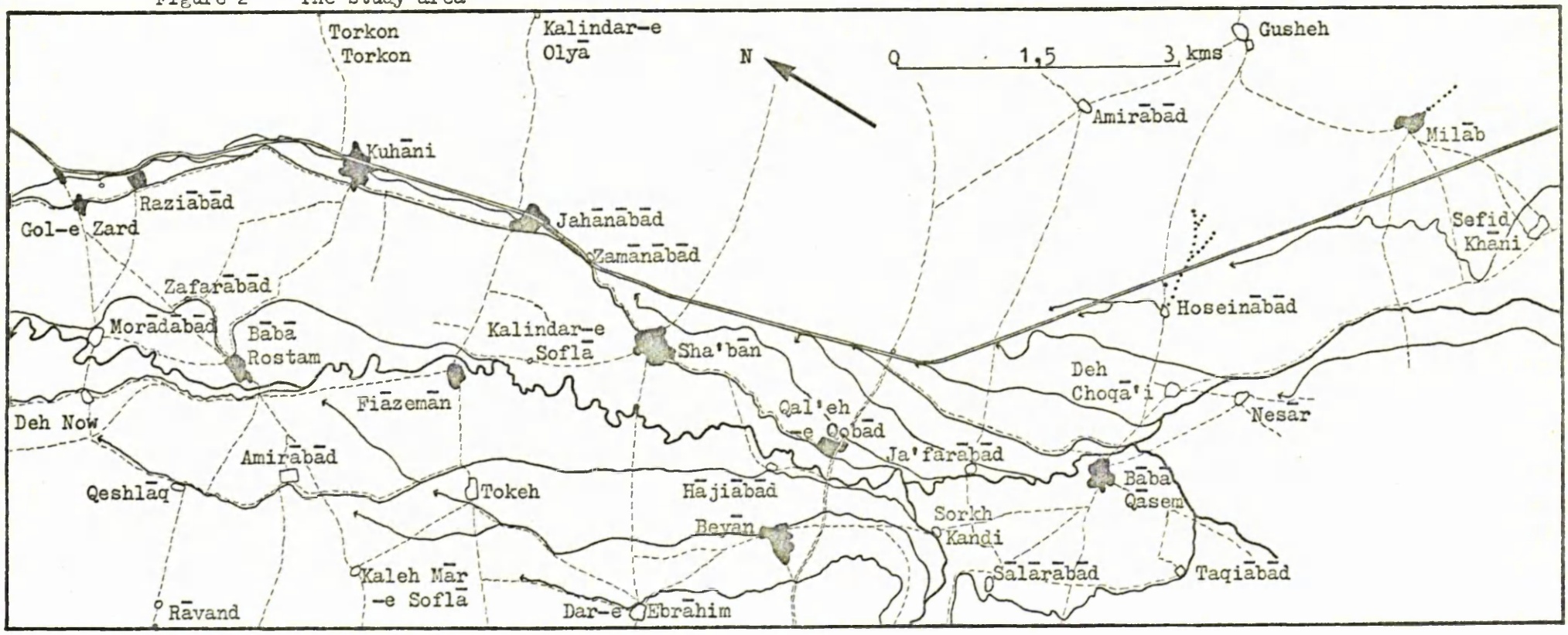
Settlement is particularly concentrated along the main canals, with large villages regularly spaced. Elsewhere in Olyā, in the higher side valleys and surrounding mountains, villages are fewer and agriculture far less intensive, relying on dry land cropping and animal grazing. These villages would appear in general to be of more recent origin, a result of gradual settlement by nomads, and their size is smaller than in the main valley.

The eleven villages under detailed study form a line along the main valley, generally close to the asphalted road, and stretch over a distance of 15 kilometres. They account for some 3,000 hectares of irrigated land and a similar area of unirrigated land. Of this land approximately one-third is still owned by the former landlord class (see Chapter 3). The eleven villages are not completely contiguous, but are separated by smaller villages such as Kalindar-e Soflā and Gerde Cham or the river (see Figure 2). With these other villages they constitute a narrow area of intensive irrigated agriculture.

For the most part the houses of the villages are constructed of mud-brick, with flat roofs and surrounded by high walls. The villages are not themselves walled but the houses tend to be

1. Ghirshman, R. "Irān", (1954), and Contenau, G., and Ghirshman, R. "Fouilles du Tēpē-Giyān près de Nahāvand, 1931 et 1932", Série Archéologique, Vol.3, Paris (1935)
2. Frye, R.N. "The heritage of Persia", (1963)

Figure 2 The study area



Villages under study

Other villages

River Āb-e Nahāvand

Irrigation canals

Main road

Secondary road

Donkey tracks

Source: Fieldwork

clustered together. The central points of the village are the mosque, shops, bath (hammām) and tea-house (where there is one). Regular mini-bus services link the villages to Nahāvand city and tractors, pick-up trucks and taxis are a common sight.

The population of the villages consists of all or some of the following: former landlords (though these are generally absentee), small farmers (whether share-croppers or peasant proprietors (khordeh mālek) before land reform) and a "landless" (khoshneshin) class of agricultural labourers, artisans, shopkeepers and members of the religious classes. All classes are found in most villages but landlords are not found in Kuhāni or Sha'bān. The total population numbered about 10,000 in 1973 which, if the figures may be accepted as roughly accurate, showed a marked increase from the earlier census figures of 6,546 in 1956 and 8,441 in 1966 (see Table 1). The largest village is Sha'bān with 1,705 people and the smallest Raziābād with 265. Of the total number of 1,778 households, the Department of Co-operation and Rural Affairs listed 997 as owning land - that is, persons to whom land had been (or was being) transferred under the reform. Ethnically the villagers closely resemble the people of neighbouring Lorestān and linguistically they speak a variety of lori dialects. Yet economically and politically their attachment is first and foremost to Nahāvand city and modern Persian (or fārsi) is understood by all.

1.3. CRITERIA FOR CHOICE OF STUDY AREA

There were several closely connected reasons for the choice of Olyā sub-district and in particular the eleven villages as the study area. First, the villages had already been designated a Pilot Villages Project by the Ministry of Agriculture in 1970; they

Table 1 Breakdown of the population of the eleven villages

Village	1956 (Male) (Female)		1966 (No. of households)		1973 (No. of households)	
Gol-e Zard	193	(90) (103)	276	(56)	308	(59)
Raziābād	188	(93) (95)	237	(47)	265	(50)
Kuhāni	1132	(560) (572)	1427	(273)	1642	(258)
Bābā Rostam	611	(315) (296)	765	(147)	953	(175)
Jahānābād	539	(273) (266)	752	(155)	1026	(174)
Fiāzemān	346	(166) (180)	436	(78)	526	(100)
Sha'bān	1307	(680) (627)	1499	(308)	1705	(311)
Qal'eh-e Qobād	516	(258) (258)	711	(145)	812	(156)
Beyān	564	(277) (287)	862	(168)	1026	(189)
Bābā Qāsem	685	(344) (341)	866	(159)	1022	(186)
Milāb	465	(228) (237)	610	(111)	661	(120)
Total	6546	(3284) (3262)	8441	(1647)	9946	(1778)

Note: 1. All figures for population should be viewed with reserve, as detailed household questionnaire work in 1973-74 suggested numerous errors.

2. Number of households is not defined in the census and is rather meaningless as extended families with different landholding rights (nasaq) may well live in the same walled compound (hayāt) (see Chapter 7).

Source: 1956 & 1966 - National census

1973 - Malaria Department, Nahāvand city

were to receive more intensive agricultural extension work under the auspices of the Development and Extension Corps Department (see Chapter 6.2.), and therefore formed a conveniently defined area for study. The Extension Corps Department also demonstrated from the start its interest in such a study by the provision of assistance in the form of air photographs and inter-departmental introductions which facilitated preparation for fieldwork. Additionally, the presence of an American Peace Corps volunteer, who had been actively engaged in extension work in the eleven villages since 1970, made possible the establishment of relatively rapid close contact with the villagers and helped overcome language difficulties in 1973. Secondly, just as encouragement for the agricultural extension project was initially given by the Shell-financed[1] extension experiment and Agricultural Research Centre at Borgo a Mozzano in Italy, so guidance in data collection for this thesis was drawn from the questionnaires used at Borgo. Thirdly, judging from my own earlier fieldwork in western Irān[2], the population and area covered seemed suitable for my aims and the time at my disposal. Moreover, by isolating national issues at a localised level, the problems of stepping on politically sensitive ground or of meaningless generalisations could be largely avoided. It should be stressed that no attempt will be made to relate this study of Olyā to Irān as a whole, for generalisation in the Irānian context is almost invariably misleading. Finally, the changes occurring and intended for the villages, by way of social and economic development, and the likely location of a farm corporation within the area, made the construction of a thesis possible.

1. Finance and ownership were taken over by the Italian state-owned oil corporation, Ente Nazionale Idrocarburi, in 1974.
2. Stobbs, C.A. "Land and water resources of Hamadān, Irān", unpublished undergraduate dissertation, Department of Geography, Durham University (1970)

CHAPTER TWO PHYSICAL RESOURCES RELEVANT TO AGRICULTURE IN OLYĀ

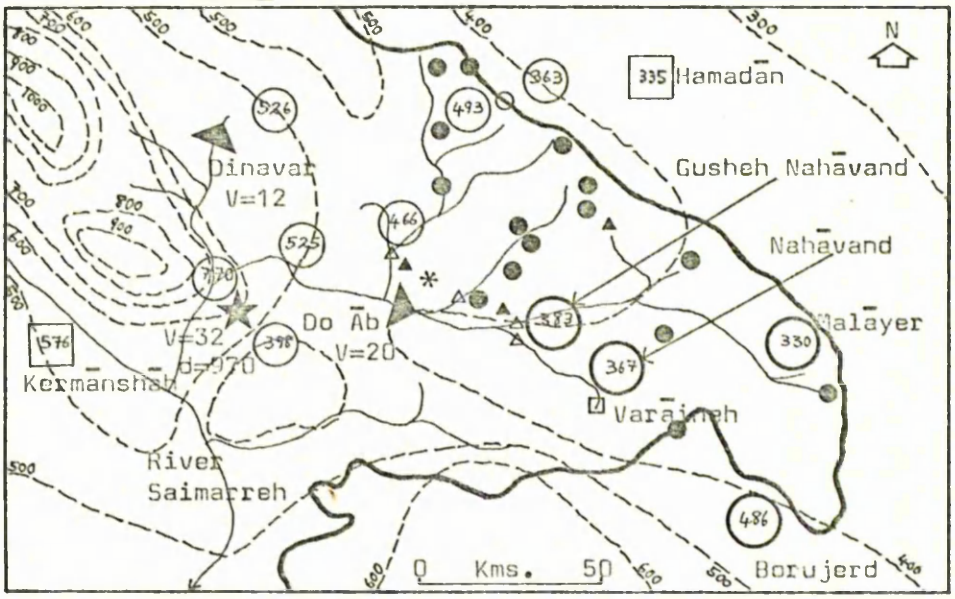
This chapter examines the physical resources of Olyā and in particular their relevance for agriculture in the main valley in which the eleven villages under study are situated. Detailed and reliable data in the Zagros mountain area is in general sparse, but Olyā is fortunate in that a meteorological station has operated continuously there since 1956, a semi-detailed soil survey was carried out in 1959 and a survey of the potential of the water resources and reticulation system of the Āb-e Nahāvand for further agricultural development was completed in 1960. Furthermore, in recent years several consultancy reports to the Irānian government - Gibb (1966), Āb va Khāk (1971), Ābkāv (1972) - and a doctoral thesis submitted to the University of Berne[1] have included the Nahāvand shahrestān, and revised the earlier data. Between 1972 and 1974, during my own fieldwork, a diary was also kept of local incidents related to environmental influences and constraints, notably climatic extremes, such as floods, late harvests, and ravages of crops by pests or disease.

2.1. CLIMATE

Olyā sub-district has one meteorological station at Nahāvand city, established at $34^{o}12'$ N., $48^{o}22'$ E., and records of temperature and precipitation are available from 1956 onwards at the Irānian Meteorological Department. It is not known how much reliability can be placed on this data. Supporting and comparative data has also been drawn from the nearby evaporation station of Varāineh, established at $34^{o}05'$ N., $48^{o}25'$ E. in 1968, from the meteorological station at

1. Gigon, O. "Aperçu hydrologique du bassin de la rivière Gāmāsiāb en Irān", doctoral thesis, University of Berne (1974)

Figure 3 Existing hydrometeorological stations: isohyetal lines



Meteorological Department (Ministry of Roads') stations:

○ Raingauge station - number inside shows mean annual precipitation, 1966-1970

◯ Climatological station

□ Synoptic station

△ River gauge station

□ Evaporation station

Ābkāv consultant engineers'stations:

● Raingauge station

* Climatological station

▲ River gauge

Sir A. Gibb consultant engineers:

▶ Proposed storage dam site
V - Dam storage (beyond the gauge station), million cu. m.
d - Discharge of river at gauge station, million cu. m. per annum

★ Gauge station: possible dam site

500 Isohyetal lines (mms.)

⟶ Rivers

Watershed

Source: Fieldwork, 1972-74

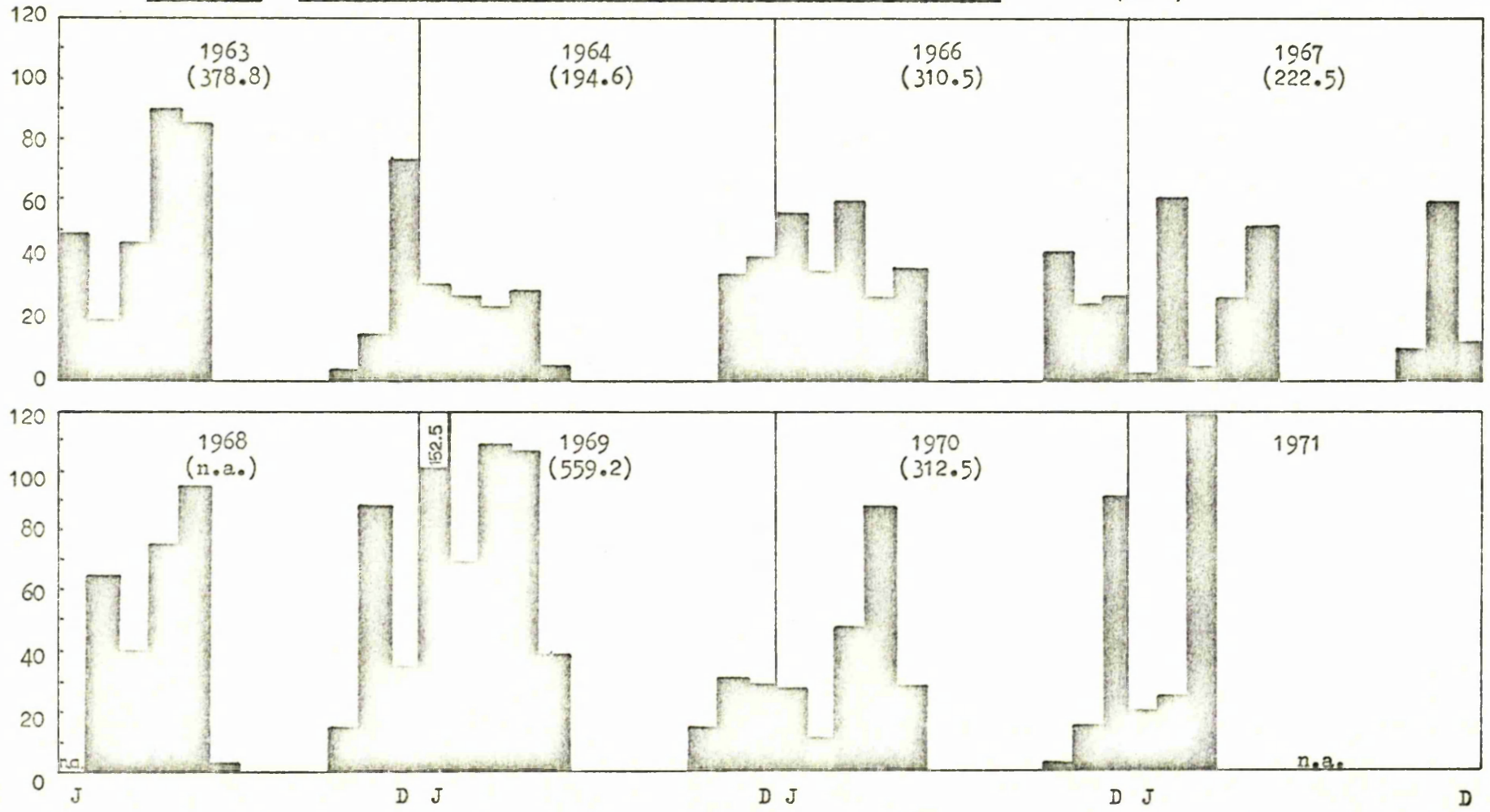
Gusheh Nahāvand in Soflā sub-district, established at 34°17' N., 48°14' E., in 1957, thirteen kilometres to the north-west, and from more generalised information for western Irān.

2.1.1. PRECIPITATION

Most of the precipitation of Olyā sub-district falls between October and May and is associated with the passage of cyclonic depressions from the west in late autumn and winter and convectional air currents especially in spring. Annual precipitation averages about 350 mms. for both the above meteorological stations (see Figure 4 and Table 2), although in the mountains especially to the west the total is much higher. Records at Varāineh station (see Table 2), on the mountain fringe, give some indication of the increasing total. No records are available for the western mountain barrier, but it does seem to shelter the main valley from rain-bearing westerlies. Equally, however, the mountains direct much of the precipitation they trap to the valley either directly as surface runoff, or indirectly via underground water-bearing rock strata (see sections 2.2. and 2.3.).

Snowfall accounts for much of the precipitation on the mountains. Snow falls from October onwards and may remain on the highest peaks throughout the year. The lower valley also receives snow, which may lie in a bad year for as long as four months or in a mild year, like 1972-73, for as little as two months. Villages in the mountains may be completely cut off from outside contact during winter and even low-lying villages, especially away from the main road, like Bābā Rostam or Bābā Qāsem, may also be effectively isolated for several weeks on end. The first major snowfalls mark the end of the agricultural year and the beginning of a period of "enforced hibernation" for the village. The melting of the snows

Figure 4 Precipitation data: Nahāvand station, 34°12'N., 48°22'E. (mms.)



Source: Irān Meteorological Department

Note: n.a. - not available
1965 - not available

Table 2 Precipitation data (mms.)

Gusheh Nahāvand station: 34°17' N., 48°14' E.

	1965	1966	1967	1968	1969	1970	1971
J.	105	60.5	18	71	171.5	33.5	5
F.	3	27.5	61	62	27.5	13	23
M.	67.5	55	9	26	94	39.5	95
A.	27.5	32	18.5	89	81	78	
M.	15.5	27.5	52.5	117.5	35.5	30	
J.	-	-	-	-	-	-	
J.	-	-	-	-	-	-	
A.	2	-	-	-	-	-	
S.	5	2	-	-	-	-	
O.	48.5	83.5	22	29.5	23.5	3	
N.	79	-	74	62.5	31	23	
D.	2	22.8	15	32.5	21	101	
	355	310.8	270	490	485	321	

Varāineh station: 34°05' N., 48°25' E.

	1348	1349	1350	1351	1352
F.		34.5	177.5	91.5	88
O.		87.5	40	95.5	10
K.		-	11	16.5	-
T.		-	-	-	-
M.		-	35	-	-
S.		-	-	-	-
M.	29	x	1.5	2	
A.	52	x	133	100	
A.	10	159	120	109	
D.	49.5	x	44	16	
B.	78.5	x	102	50	
E.	66.5	83	80	89	
	X	X	744	569.5	x

Note: - = zero x = data missing

Source: Irān Meteorological Department

in the main valley in spring likewise marks both the start of the crop year and also the main period of rainfall.

The Nahāvand station has virtually no record of rainfall in the summer months, June to September inclusive, when water is most needed for agriculture. In summer it would seem that high pressure in central Irān shuts out the wet westerlies. However, highly localised cloudbursts are a feature of the summer months, and are potential hazards for the farmer especially at harvest time. More dangerous still, though less frequent, are violent summer storms over the mountains. In late July 1971, for example, a storm broke over a six kilometre stretch of mountains above and to the east of Nahāvand city. The deluge lasted for some 48 hours, and the ensuing run-off caused severe flood damage to the city and to four villages leaving a trail of destruction: the small village of Kalindar-e Olyā and the hamlet of Torkon Torkon were totally destroyed; two villages, Kuhāni and Jahānābād, were partially ruined; eleven people were killed; animals were drowned; much damage was done to the harvest; and a large area of infertile debris was deposited[1]. Similarly in 1968 the villages and crops of Milāb, Deh Choqā'i and Hoseinābād at the eastern end of the main valley were damaged by a flash flood following a sudden storm in the mountains. However, this was in spring and therefore rather more typical. In both examples the villagers were deeply concerned about the possibility of a recurrence and requested the authorities to strengthen earthen flood barriers and deepen several irrigation-cum-drainage canals. Damage to cropland was fortunately not too severe on both occasions, due mainly to the protection of irrigation canals, especially the Sha'bān canal in the 1971 flood, which acted as a break to the run-off from the hillside and dispersed it down

1. D.K. Lieb, Peace Corps field report, 1st Tir, 1350

the valley.

The concentration of precipitation in the winter months, when agricultural activity is reduced to a minimum by low temperatures, means that almost all the seasonal water-balance surplus in the valley and surrounding moutains is lost either in direct run-off or in rapid snow-melt run-off in spring. Thus, virtually all the water required for agriculture must be supplied artificially and reliance on rain-fed agriculture is both poorly productive and hazardous (see Chapter 4.1.).

Apart from its marked seasonality, precipitation in the main valley of Olyā is very variable from year to year due to the influence of the surrounding moutainous physiography. 1964, for example, was particularly dry with only 194.6 mms. recorded at the Nahāvand station. The year before almost twice this amount fell and in 1969 559.2 mms. was recorded (see Figure 4). However, variations take on rather less significance for agriculture than would be expected. A shortfall in winter and spring precipitation naturally increases the need for supplementary water for crops in Olyā, and yields of unirrigated (deimi) crops - wheat, barley, pulses - in particular fall sharply, often not covering the amount of seed planted, as widely reported in 1973 and 1974. The main crops are, however, at least partially irrigated, and a shortfall for them generally means merely a small reduction in yield. Only in very dry years, such as 1964 and 1974, are crop yields seriously reduced. For the eleven villages under study precipitation certainly is not the decisive factor in agricultural exploitation, though its localised variations may have an important effect on crop yields; an adequate supply of water for irrigation is guaranteed by the large karstic spring which is the source of the Gāmāsiāb river (see section 2.3.). On the other hand a "wet year", with an above

average total and some rainfall in the summer months, does help to ensure a good harvest all round, especially on semi-irrigated and deimi land. It should be noted, however, that as the intensity of cultivation of irrigable land increases further, a year of shortfall in precipitation will necessitate the maximum efficiency in irrigation, water conservation and distribution (see Chapter 4.1.).

The main valley of Olyā sub-district in which the eleven villages under study are situated should therefore be viewed as an atypical area in that although the growing season is a period of water balance deficit the availability of groundwater enables agriculture to be practised successfully.

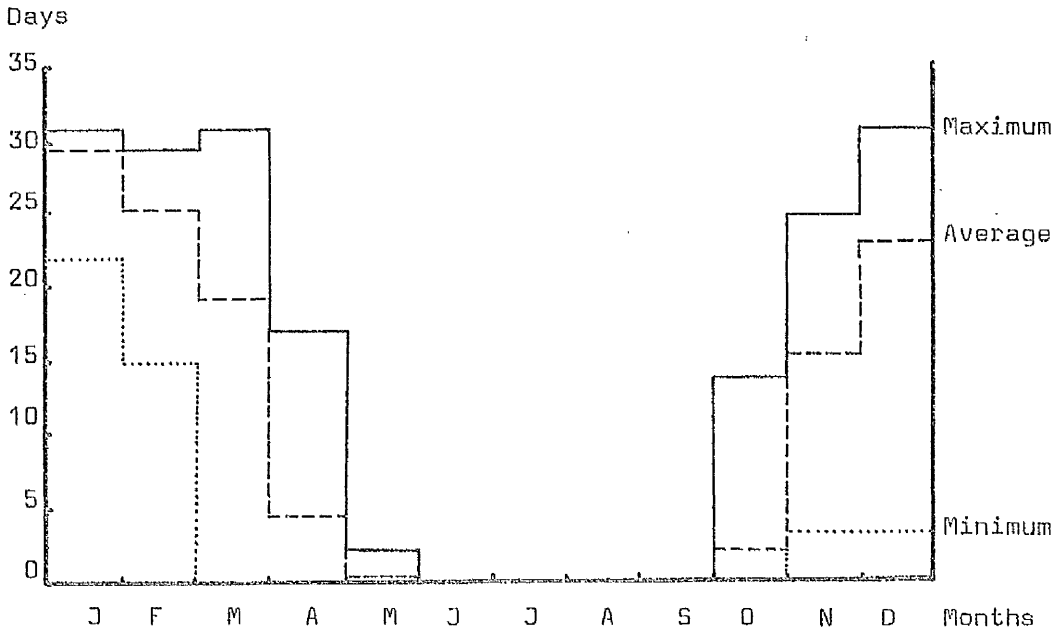
2.1.2. TEMPERATURE

The temperature records like the precipitation records indicate the importance of a very definite seasonal rhythm and considerable annual variations for agriculture in Olyā (see Tables 5 and 6). The cold season generally lasts from November (by which time the harvest is completed and the winter grain planted) to March inclusive and temperatures may fall to -20°C, emphasizing Olyā's marked continentality of location. The number of days of frost, according to the few complete records available at the Gusheh Nahāvand station, has varied from less than 90 to more than 150 (see Table 3), and thus the date of planting the first spring crops in the main valley varies considerably. In 1973 planting started in early March, over a month earlier than in 1972, following a particularly mild winter. In 1964, however, severe cold and frost in April damaged much of the spring crop. Higher up away from the main valley the cold season is of course longer and more restrictive for agriculture.

With a limited growing season, the range of crops and potential for double-cropping is restricted; wheat, pulses, vegetables and deciduous fruit predominate. Cotton, whose growing season is longer than the valley's average, is grown in small patches for local use, but yields are always low. Double-cropping is only successfully practised after an early spring and then with a combination of only certain crops, for example, opium and then chickpeas or beans. It should be noted that a harsh winter is especially favourable for fruit growing, encouraging the dormant season of the trees to break and thus resulting in a higher potential yield.

In April and May the temperature rises rapidly and in summer may reach 40°C (see Tables 5 and 6). In general, however, the high altitude of the valley and the surrounding moutains ameliorates

Table 3 Number of days of air frost at the Gusheh Nahāvand station, 1960–1970



Month	1960	61	62	63	64	65	66	67	68	69	70
J.	28	28	31	22	x	31	16	28	26	29	27
F.	29	27	21	15	x	22	20	25	28	20	28
M.	30	21	14	21	x	8	21	25	12	-	4
A.	5	9	7	-	x	4	2	6	-	5	-
M.	-	-	-	-	x	1	-	-	-	-	-
	No days of frost during the months of June, July, August and September.										
O.	14	-	-	2	x	-	-	-	-	-	-
N.	16	19	20	21	x	5	9	6	1	19	5
D.	30	26	24	31	x	29	28	28	16	31	28
Total	152	130	117	112	x	100	96	118	83	104	92

Table 4 Number of days of air frost at the Nahāvand station

Month	1965	66	67	68	69
J.	x	28	26	x	31
F.	x	28	27	x	22
M.	x	31	24	11	-
A.	x	17	x	3	-
M.	x	2	x	-	-
	No days of frost during the months of June, July, August and September.				
O.	6	-	-	-	-
N.	14	x	17	3	11
D.	31	x	20	19	x
Total	x	x	x	x	x

Note: x = data missing
- = zero

Source: Iranian Meteorological Department

Table 5 Temperature figures for the Nahāvand station,

$34^{o}12'$ N., $48^{o}22'$ E. (1740 metres a.s.l.)

Month	1961 Mean Daily	1961 Mean Max	1961 Mean Min	1961 Absolute Max	1961 Absolute Min	1962 Mean Daily	1962 Mean Max	1962 Mean Min	1962 Absolute Max	1962 Absolute Min
J.	-0.1	5.3	-5.6	9	-11	-0.2	5.6	-6.3	8	-12
F.	-0.1	6.4	-6.7	11	-19	4.3	11	-2.3	17	-7
M.	5.5	13	-2	20	-8	8.9	17.1	0.7	23	-4
A.	9.9	17.5	2.4	26	-1	10.5	18.9	2.2	23	-2
M.	16.6	27.2	6.1	30	4	16	25.8	6.3	32	2
J.	20.7	32.5	9	38	6	20.8	33.1	8.6	38	5
J.	25.7	37	14.5	40	12	26	38	14	41	11
A.	24.8	36	13.7	38	9	24.8	36.2	13.5	39	10
S.	18.4	30.6	6.2	32	3	21.4	34.5	8.3	37	3
O.	13.5	24.9	2.2	30	1	14.9	25.1	4.7	30	1
N.	6.8	14.5	-0.8	21	-10	7.5	15.8	-0.8	25	-9
D.	3.8	10.3	-2.6	14	-7	3.9	11	-3.2	15	-8
Year	12.1	21.2	3	40	-19	13.2	22.7	3.8	41	-12

Month	1963 Mean Daily	1963 Mean Max	1963 Mean Min	1963 Absolute Max	1963 Absolute Min	1964 Mean Daily	1964 Mean Max	1964 Mean Min	1964 Absolute Max	1964 Absolute Min
J.	4.3	10.7	-2.2	14	-7	-8.9	-0.3	-17.5	8	-24
F.	5.7	12.1	-0.6	16	-5	3.7	10.4	-2.9	17	-7
M.	7.7	14.7	0.6	19	-7	9.7	16.2	3.2	23	-2
A.	13	20	6	25	1	11.9	18.7	5	25	-1.5
M.	15	22.8	7.2	32	3	17.7	27.4	8	32.5	1
J.	21.7	33.6	9.9	38.5	6	22.5	33.6	11.3	35	8
J.	26.9	40.1	13.7	43.5	10	28.2	38.3	18.1	42	11
A.	26.5	38.7	14.3	41	8	24.5	34	14.5	40	9
S.	22	35.1	8.9	38.5	4	21.6	33.2	10	37.5	5.5
O.	16.5	27.2	5.9	34	0	22.4	32.3	12.5	36	11
N.	9.7	20.4	-1.1	24	-5	7.1	14.7	-0.4	20.5	-8
D.	1.8	8.9	-5.3	17	-17	-2.1	3.2	-7.5	14	-11.5
Year	14.2	23.7	4.8	43.5	-17	13.2	21.8	4.5	42	-24

Month	1966 Mean Daily	1966 Mean Max	1966 Mean Min	1966 Absolute Max	1966 Absolute Min	1967 Mean Daily	1967 Mean Max	1967 Mean Min	1967 Absolute Max	1967 Absolute Min
J.	2.3	9.5	-4.9	15	-15	x	x	-4.7	x	-19
F.	0.7	9.5	-8	15	-12	7	17.7	-3.7	19	-12
M.	3	12.5	-6.5	17	-12	x	x	-1.7	x	-7
A.	7.1	14.4	-0.2	22	-6	x	19	x	21	x
M.	13.9	21.7	6.1	28	0	x	x	x	x	x
J.	21.1	29.6	12.7	33	10	x	x	x	x	x
J.	26.8	32.5	21.2	36	12	27.3	33.5	21.2	38	18
A.	x	x	x	x	x	x	x	13.1	x	11
S.	19.3	25.1	13.6	34	9	x	x	13	x	10
O.	x	x	7.4	x	4	12.5	17	8	21	5
N.	x	18	x	22	x	x	x	2	x	-4
D.	x	16	x	20	x	x	x	-5.3	x	-14
Year	x	x	x	x	x	x	x	x	x	x

Note: x = missing data

Source: Iranian Meteorological Department, Ministry of Roads

Table 6 Temperature figures for the Gusheh Nahāvand station, $34^{o}17'$ N., $48^{o}14'$ E. (1800 metres a.s.l.)

Month	1965 Mean Daily	1965 Mean Max	1965 Mean Min	1965 Absolute Max	1965 Absolute Min	1966 Mean Daily	1966 Mean Max	1966 Mean Min	1966 Absolute Max	1966 Absolute Min
J.	-2.2	1.7	-6.2	6	-12.5	6	12.3	-0.3	17	-6
F.	3.6	9.9	-2.7	17	-10.5	5.6	12	-0.8	17	-3.5
M.	8.4	14.9	1.9	21.5	-5	7.2	14	0.4	19.5	-3
A.	9	14.9	3	24	-3	11.7	19.3	4.2	25.5	-0.5
M.	17.4	26	8.8	33	0	17	25.8	8.3	32	1.5
J.	21.3	32.3	10.4	34.5	7	22.2	34.1	10.4	37	5
J.	25.1	35.7	14.5	39.5	10	25.7	36.5	14.9	40.5	9.5
A.	26.3	36	16.7	39	11	25.5	36.4	14.6	38	11.5
S.	20.1	30.6	9.3	34	3.5	20.5	31.1	10	36	6.5
O.	14.1	21.3	7	26	4	14.7	21.5	7.9	27	5
N.	9.5	15.3	3.7	20	-1.5	9.3	17.7	1	21	-6
D.	4	11.5	-3.6	17	-8.5	4.5	11.5	-2.6	17	-5.5
Year	x	x	x	19.5	-12.5	x	x	x	40.5	-6

Month	1967 Mean Daily	1967 Mean Max	1967 Mean Min	1967 Absolute Max	1967 Absolute Min	1968 Mean Daily	1968 Mean Max	1968 Mean Min	1968 Absolute Max	1968 Absolute Min
J.	0.9	6.9	-5	14	-16	0.1	5.9	-5.7	12.5	-12
F.	1	5.7	-3.7	7.5	-11.5	-1.5	3.8	-6.8	15	-14
M.	4.8	11.9	-2.3	17	-6	7.1	13.8	0.6	17.5	-9
A.	10.6	17.8	3.4	22	-6.5	11.2	18.1	4.3	25	1
M.	16.9	25.1	8.7	29	2.5	15.5	23	8.1	28	4.5
J.	20.2	31.1	9.4	37	2.5	20.3	30.4	10.3	36.5	7.5
J.	26	37.2	14.7	40.5	11	25.8	36.9	14.7	39.5	10
A.	26.2	37.4	15	39.5	11	23.8	35.5	12.2	38	9
S.	20.4	30.9	10	36	6	19.4	30.5	8.2	35	6.5
O.	14	23	5	26	2.5	15.3	25.3	5.3	30.5	3
N.	8.5	14.3	2.8	23	-5.5	9.2	15.2	3.2	19.5	0
D.	1.3	7.2	-4.6	14	-11.5	4.7	9.4	0	14.5	-6
Year	x	x	x	40.5	-16	x	x	x	39.5	-14

Month	1969 Mean Daily	1969 Mean Max	1969 Mean Min	1969 Absolute Max	1969 Absolute Min	1970 Mean Daily	1970 Mean Max	1970 Mean Min	1970 Absolute Max	1970 Absolute Min
J.	-2.9	1.7	-7.6	10	-22.5	1.8	8.1	-4.5	10	-10
F.	-2.1	3	-7.2	13	-23.5	5.5	12.6	3.4	16.5	-5.5
M.	10.1	15.4	4.8	20	1	5.7	11.7	0.3	23.5	-4
A.	10.3	16.1	4.6	24.5	-1	13.4	22.2	4.6	28	-0.5
M.	16.3	25.4	7.3	30	5	16.5	26.3	6.8	32.5	3
J.	21.6	32.5	10.8	35	8	21.4	32.4	10.4	38	5.5
J.	25.1	37	13.7	42	9.5	25.6	35.8	15.5	38	12.5
A.	24.9	35.8	14.3	39.5	10	24.8	36.7	12.9	40	9
S.	18.2	29.4	10.6	34.5	7	19.4	30.4	8.5	35	6.5
O.	16.2	24.6	7.9	30.5	3.5	14.4	24.6	4.3	30	1.5
N.	6.5	13.9	-0.8	16.5	-5.5	10.7	19.3	2.1	23.5	-1
D.	4.3	12.6	-4	16	-7	0	7.1	-7.1	17.5	-18
Year	x	x	x	42	-23.5	x	x	x	x	x

Note: x = missing data
Source: Iranian Meteorological Department, Ministry of Roads

temperatures, although long hours of bright summer sunshine encourage rapid crop growth. Nevertheless, an occasional intense hot spell of just a few days' duration can cause crop damage, as for example in August 1973 when the sugar beet crop was "burnt".

The high daily range of temperature, of possibly 20°C, is an additional potential constraint for agriculture. For example, extreme variations may cause damage to maturing wheat and barley, especially at the "milk" stage of ear growth. Similarly, during the flowering phase of orchard trees, they may cause serious losses in quantity of fruit, especially when night temperatures fall to near freezing point in spring.

Finally, mention must be made of the dust "devil", a minor but common hot weather phenomenon occurring at any time of the day in fairly calm conditions. It is a vortex or rotating column of air, sharply delimited, and because of its load of dust easily visable. It moves with the direction of the wind and may curl upwards to several hundred feet in height. It appears to be violent but does not do much damage.

2.1.3. WIND

The importance of wind as an erosive force on cultivated land in the main valley is minimal, for the mountains act as an effective shelter, although in the neighbouring valleys of Malāyer and Borujerd wind may be a serious hazard for agriculture especially in the summer months, and may remove the dry top-soil.

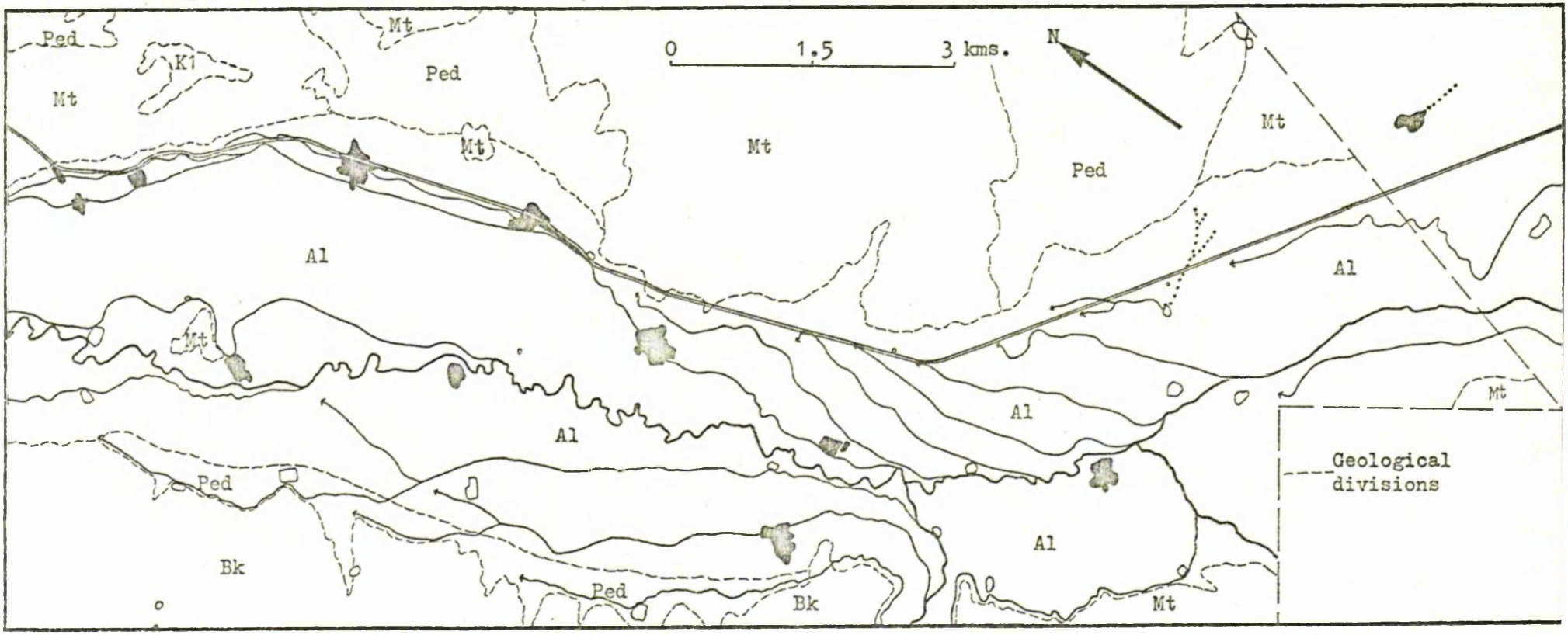
2.2. GEOLOGY

Olyā lies on the border of the Bisitun zone and the Hamadān zone, which together with the Radiolarite and Ophiolite zone make up the major complex known as the Irānides[1]. The Bisitun zone, formed of limestone and of cretaceous age, is a remarkable formation and of great relevance to agriculture. It extends in a major belt from north-west of Kermānshāh to south-east of the Nahāvand shahrestān and may reach several thousand feet in thickness. Its importance lies in its capacity to store considerable amounts of ground-water. The ability of precipitation to infiltrate limestone is well known. In Olyā, and all along the limestone belt, this phenomenon is highly developed and the water stored in a complicated system of caves and underground lakes emerges in numerous springs, which historically have been of great importance for irrigation and drinking water (see section 2.3.).

Schröder suggests that the Hamadān zone, formed of dark shales and sandstones, dark phyllites and chlorite schists of mesozoic age, underlies the Bisitun limestone, providing an impervious layer. The former zone also reaches up above its 50-100 metre overlay of quarternary alluvial and colluvial material in the valley at Olyā in several places leaving outcrops (known locally as tappeh) to a height of some 50 metres[2]. The relevance of the quarternary material for agriculture is discussed in section 2.4.; the outcrops encourage the groundwater in the alluvium to re-appear as springs, which are locally important as a source of drinking

1. Schröder, J.W. "Interim report to the government of Irān on the geology of the Karkheh river basin", FAO, Rome (1953)
2. Āb va Khāk and Electroconsult. "Karkheh river basin development master plan", Tehrān and Rome (1971)

Figure 5 The geology of the study area



Sedimentary: Quarternary – Al – older alluvium, non-differentiated deposits
Ped – pediment, younger alluvi and gravel fans
Pliocene – Bk – Conglomerate and low soil hills
Lower cretaceous – K1 – Thinly bedded limestone with chert nodules

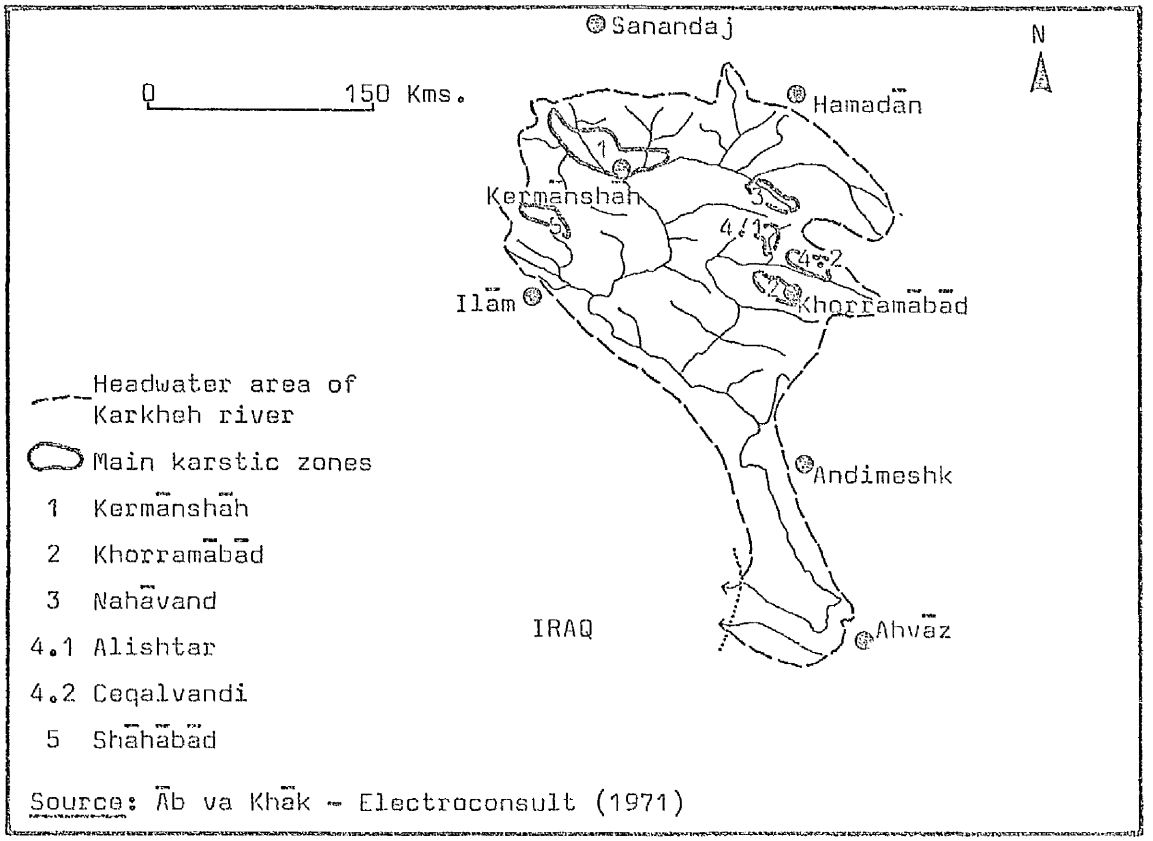
Metamorphic: Middle to Upper Mesozoic – Mt – slates, marble, micashist

Source: Āb va Khāk – Electroconsult (1971)

water, as at Tappeh-e Bābā Rostam.

Finally, the occurrence of earthquakes ought to be noted. Small tremors are felt annually and local people tell of a more severe series of quakes some ten years ago which brought about temporary localised dislocation to irrigation and agriculture, especially lower down the valley from Olyā.

Figure 6 The Bisitun karstic zone



Source: Āb va Khāk - Electroconsult (1971)

2.3. WATER AVAILABILITY

2.3.1. INTRODUCTION

The area under study is atypical of much of Irān in possessing a regular and reliable water supply, consisting of a through-flowing stream, the Āb-e Nahāvand, fed by a large spring, several small springs, and the Kharchang Rud and Pamasb streams.

There is little quantitative data on water availability and quality in Olyā. The flow of the main spring was not recorded systematically by the Ministry of Water and Power until 1969 (1348) and even this record is far from complete (see Table 7). Furthermore, an irrigation offtake at the foot of the spring but above the gauge is not taken into account. The few consultancy reports which include Olyā also contain estimates of spring and river flow and of ground-water availability, but do not attempt a detailed analysis. An earlier examination of the irrigation scheme of Nahāvand in 1960[1] gave only a rough estimate of the total water available from both springs and streams and directed its energies towards the more important question of how much water was actually utilised for agriculture and the potential for both extending and intensifying irrigation (see Chapter 4.1.). There are no systematic records of the flow of the Kharchang Rud and Pamasb streams or of the numerous small springs which occur. The fullest records of river flow available have been collected since 1954 at the Gusheh-Nahāvand station, outside Olyā sub-district, but offer only a rather confusing picture of monthly variations, and add little to our knowledge of total water availability or utilisation upstream (see Table 8).

1. Rejali, M.A. "The Nahāvand irrigation scheme: present and proposed", Tehrān (1960)

Table 7 Mean flow of the spring, Sarāb-e Gāmāsiāb, 34°06' N., 48°23' E. (cumecs.)

	1348	1349	1350	1351	1352
F.		4.52	4.95	x	5.95
O.		6.21	8.56	x	x
K.		5.29	8.98	x	6.17
T.		3.69	6.77	x	4.05
M.		2.8	4.61	x	2.84
S.		2.43	3.43	4.91	2.45
M.	4.05	x	1.77	3.73	2.73
A.	4.38	x	2.43	3.46	1.85
A.	3.59	x	4.49	3.55	1.98
D.	3.33	x	2.57	x	2.44
B.	2.95	x	x	3.47	x
E.	3.23	x	2.24	x	x

Table 8 Mean flow of the Āb-e Nahāvand at Gusheh Nahāvand, 34°15' N., 48°16' E. (cumecs.)

	1346	1347	1348	1349	1350	1351	1352
F.	3.25	5.64	x	4.32	11.34?	x	5.13
O.	1.1	6.16	x	4.39	11.54?	x	0.31
K.	0.84	6.07	x	0.16	1.6	4.02	0.38
T.	0.26	0.44	x	0.08	0.8	2.37	0.24
M.	0.25	0.27	x	0.09	2.2	x	0.24
S.	0.31	0.39	x	0.39	0.81	0.95	0.3
M.	0.25	0.35	x	x	0.49	1.3	0.25
A.	0.67	3.87	x	x	1.85	5.46	0.53
A.	2.88	4.22	x	x	8.3	8.05	2.92
D.	2.69	4.5	x	x	4.52	x	3.95
B.	2.46	7.18	x	x	4.45	5.5	4.02
E.	4.21	7.2	x	x	5.47	17.2?	9.3

Note: 1. x = data missing

2. The head of the Department of Irrigation in Nahāvand stressed that the figures should be viewed with reserve.

Source: Department of Irrigation, Kermānshāh

2.3.2. SURFACE WATER

The Āb-e Nahāvand river has its source in a major karstic limestone spring, known locally as the Sarāb-e Gāmāsiāb, or Sang-e Sorākh, several hundred metres to the south of the main valley at the foot of a limestone cliff which forms part of the Qarin range (see Plate 3). The few available records (see Table 7) and my own observations confirm that the maximum flow[1] of the spring occurs between Ordibehesht and Khordād (April to June), boosted by snowmelt, but slowly decreases to a minimum in late autumn.

From its source the river runs northwards in a narrow valley and enters the area under study (see Figure 14). East of the village of Qal'eh-e Qobād two perennial streams, the Kharchang Rud and the Pamasb Rud, join up with the Āb-e Nahāvand, and their combined flow runs north-westwards. During the summer months the two tributaries contribute little or no water to the flow of the main river as water is diverted from their upper reaches for irrigation, but in spring their flow may be considerable as their catchment area for precipitation and snowmelt is large (see Table 9). Many small natural springs in the main valley and in the higher side valleys of Olyā also provide sources of water but little of it actually flows directly into the main river. The more reliable of these at, for example, the villages of Raziābād (50 litres/sec) and Bābā Rostam (75 litres/sec) are utilised primarily for drinking water but also irrigate small patches of land nearby[2]. Surface water flow and runoff in the main valley increase markedly in spring as snowmelt and precipitation reach a peak, and the Āb-e Nahāvand often floods the low lying terraces along its banks. Cultivation is thus restricted in this narrow flood plain zone but small dense

1. Generally no more than six cumecs. Electroconsult, (1971)
2. Rejali, (1960)

Plate 3 Sang-e Sorākh: the main source of water of the Olyā irrigation system.

Plate 4 Ju-e Sha'bān in the village of Sha'bān.

plantations of willow and poplar (tabrizi) thrive (see Chapter 4.2.). Runoff in general causes little erosive damage to agricultural land for the irrigation canals, which follow the valley contours, channel most of the excess water downstream.

The Āb-e Nahāvand runs along the centre of the study area in a series of elongated loops and oxbows, slightly incised in its alluvial bed, especially below Fiāzemān, but showing little sign of rapid erosion either horizontally or vertically. Its volume of water varies greatly according to the amount taken off along its course for irrigation. At the junction of the main stream and Kharchang Rud, Rejali's team took measurements of discharge in 1959 and 1960. Though these are open to criticism on the grounds of their unsystematic collection, they nevertheless give an idea of the variations occurring (see Table 9).

Table 9 Volume of discharge of the Āb-e Nahāvand and Kharchang Rud

Date	Total discharge (litres/sec.)	Kharchang Rud
21/11/59	3,000	250
19/7/60	2,600	50
24/7/60	2,600	30
3/8/60	2,600	30
13/8/60	2,600	30
21/8/60	2,575	20
27/8/60	2,550	18
29/8/60	2,500	15

Source: Rejali, 1960

Similarly the data collected at the Gusheh-Nahāvand station provide a measure of discharge variability (see Table 8).

The large flow of the Āb-e Nahāvand in winter and spring acts as a severe barrier to communications, normally destroying small wooden foot-bridges and closing fording places, such as that at Fiāzemān. Since 1968, however, when the mountain road to Lorestān was improved, a new bridge at Qal'eh-e Qobād has opened up more villages to year-round motor traffic. Nevertheless, irrigation canals still hinder all mechanised transport, including tractors and agricultural equipment.

2.3.3. GROUNDWATER

Very little information exists concerning the groundwater resources of the alluvial bed of the river valley of Olyā sub-district. One of the few consultancy reports to the Ministry of Water and Power which includes Olyā concludes that, other than natural springs, groundwater holds little potential for irrigation development and is poorly utilised[1]. The Electroconsult examination of groundwater in 1971 confirmed this opinion but measured the depth of the water table near to the village of Fiāzemān as between two and eight metres (see Figure 14). No systematic record of water table depth in wells or pumping tests has yet been made.

In a situation of abundant surface water supplies this neglect is hardly surprising. However, fieldwork suggests that groundwater does have an important role. First, it is a major source of drinking water, and is tapped by both qanāts and shallow, hand-dug wells. The flow is in general small but reliable, and wells exist in many village households. Secondly, it is exploited by qanāts to irrigate land which cannot be reached by the existing reticulation network, for example on the higher land above Sha'bān

1. Sir A. Gibb and Partners, (1958 and 1966)

and Jahānābād villages, and more importantly for intensifying current irrigation. This latter aspect, for many years practised in the village of Hoseinābād, where the only substantial qanāt of the valley provides much needed water, should become of more widespread relevance in the near future as the increasing intensity of agricultural development demands more water, especially in a "dry" year. Recharge of the alluvial material is provided by percolation of precipitation and of water from the limestone aquifer, river and irrigation canals.

2.3.4. WATER QUALITY

From personal observations and the few tests conducted, for example Table 10, it seems that the slightly alkaline quality and low saline content of both surface and groundwater do not adversely affect their use for agricultural purposes.

Table 10 Surface water quality of the Āb-e Nahāvand at Gusheh Nahāvand

Ph	$EC \times 10^6$	Discharge (cumecs)
8.5	490	0.376

Note: Date of collection - 12th Shahrivar, 1349

Source: Ministry of Water and Power, Report No.31 (1350)

2.4. SOILS

A semi-detailed soil survey of the upper Gāmāsiāb valley, up to but excluding the land of Milāb, was carried out by the Irrigation Institute of the Ministry of Agriculture in 1959. The soils of the study area were found to be of recent origin, comprised of alluvial and colluvial material, and with the characteristics of immature brown soils. Although the report did not examine the chemical or organic characteristics of the soil in detail, physical characteristics were analysed and the soils of the study area were found in general to be deep, well-drained and suitable for producing a wide range of crops. Salinity was not found to be a problem, as my own fieldwork has since made clear, but the soil was found to be on the whole slightly alkaline, with a pH of 7.4 to 7.8. More recent investigations by two government consultancy firms, Ābkāv and Āb va Khāk-Electroconsult, corroborated these findings but also emphasized the general nutrient deficiency of the soil, especially in respect of phosphorous.

The 1959 survey classified the soil into the following divisions (see Figure 7):-

Alluvial soils

Qd - Qobād

Qdp - Qobād poorly drained phase

Za - Zafarābād

Ga - Gāmāsiāb

Alluvial fan soils

Tk - Tokeh

Tkp - Tokeh brown phase

Colluvial soils

By - Beyān deep soils

Bys - Beyān shallow phase

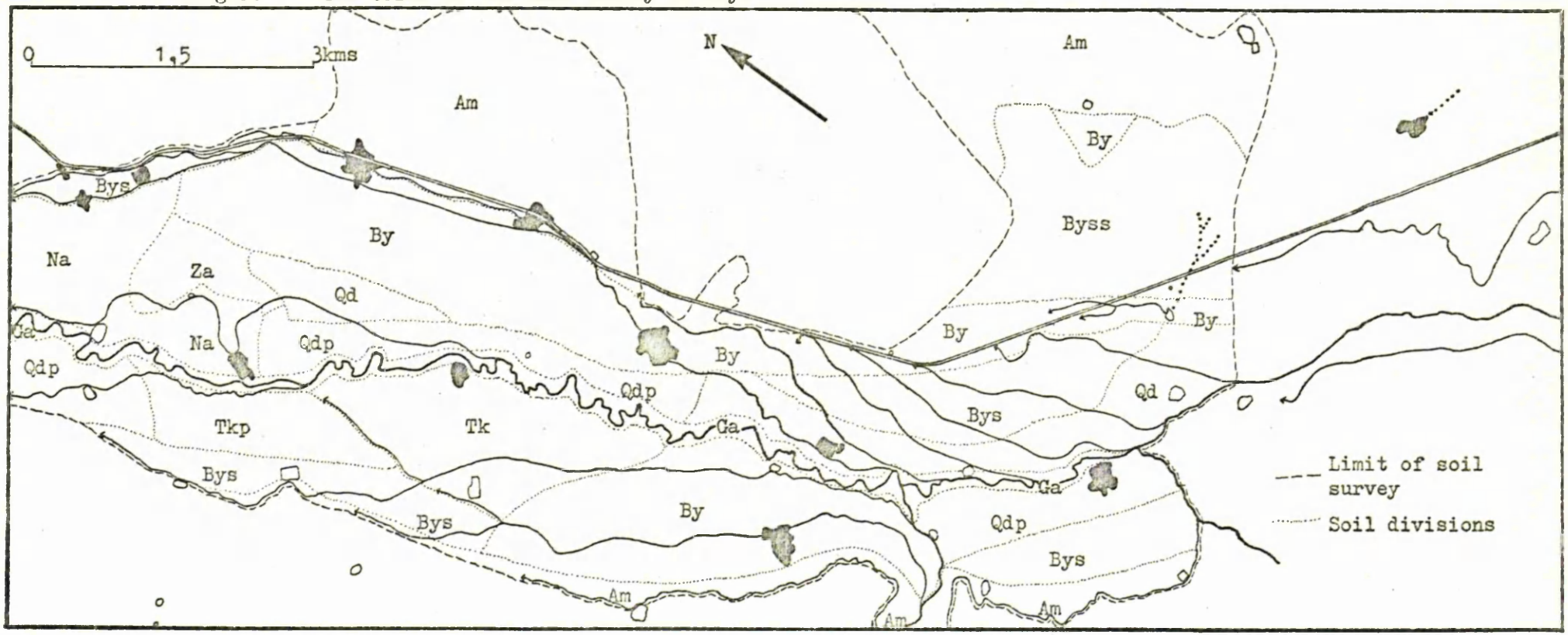
Byss - Beyān shallow, stony phase

Na - Nahāvand

Mountain soils

Am - Amirābād

Figure 7 The soils of the main valley of Olyā



Source: Irrigation Institute, Ministry of Agriculture (1959)

From this it may be concluded that detailed soil tests now need to be made if the use of chemical fertiliser by the farmers is to be optimised (see Chapter 5.2.3.)

2.5. LAND CLASSIFICATION

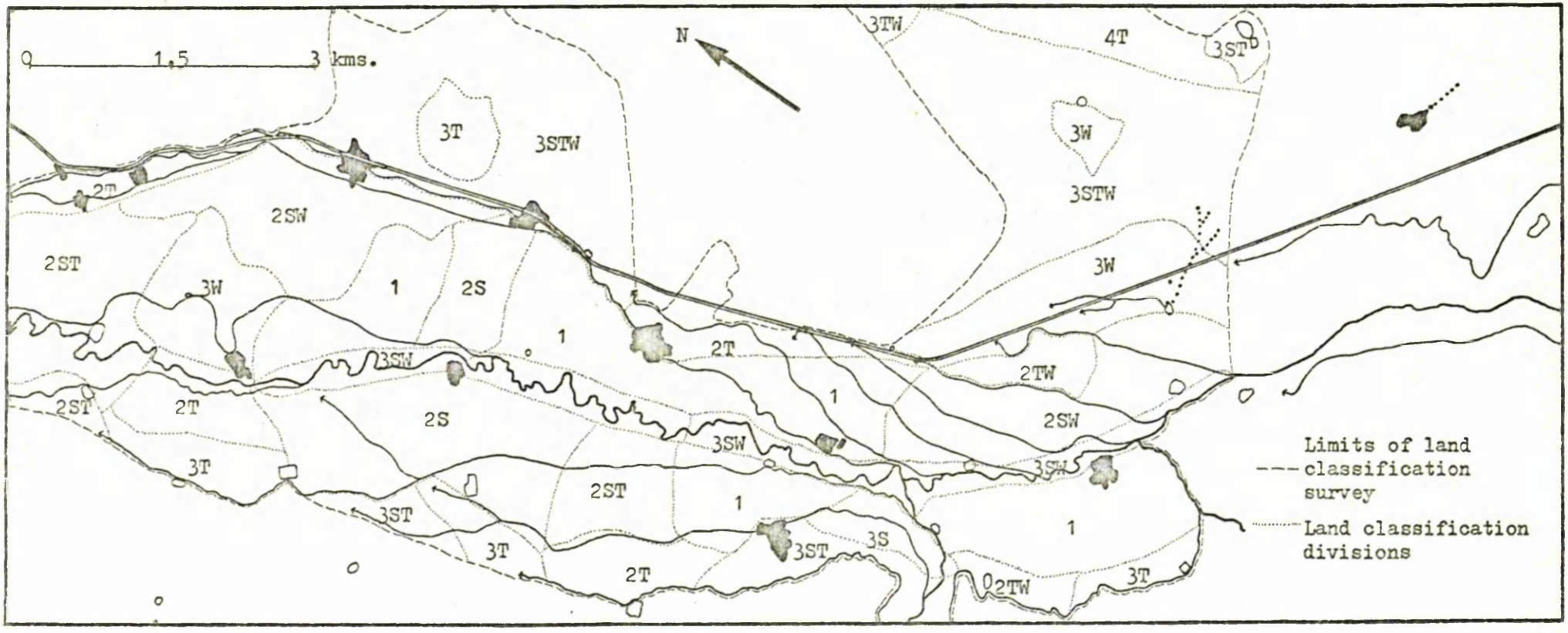
On the basis of a map drawn by the Irrigation Institute in 1959 evaluating the suitability of land in the upper Gāmāsiāb valley for irrigation and agricultural development, and supported by my own fieldwork, I have drawn a map of land classification for the study area. The classification of land is based on the examination of soil and site characteristics which limit the soil behaviour and its expected evolution as well as the land use capability under sustained irrigation. Economic considerations are not taken into account.

The land classification is as follows:- (see Figure 8)

Class 1 - Land with very minor or no physical limitations to agricultural use. The soils are deep, well drained alluvials and colluvials, lying on gently sloping sites, and are easily cultivated. The land is considered very suitable for sustained irrigated agriculture and capable of producing good yields of a wide variety of crops under present conditions.

Class 2 - Land with slight hazards and / or limitations of soil (mainly heavy texture), salinity, topography or drainage. Under present conditions this land is suitable for sustained irrigation, and capable of producing good yields from a slightly narrower range of crops than Class 1. Some of the land could be transformed into Class 1 land by means of low cost improvements such as levelling and drainage.

Figure 8 Land classification of the main valley of Olyā



Source: Samadi, M. (1959)
Fieldwork, 1973-74

2S - Land with a slight problem of gravel or heavy texture.

2ST - Land with a slight problem of gravel and undulating micro-relief.

2SW - Land with a slight problem of gravel and moderate flooding.

2STW - Land with a slight problem of gravel and undulating micro-relief and moderate flooding.

2T - Land with a slight problem of undulating micro-relief.

2TW - Land with slight undulating micro-relief and a moderate flooding problem.

2W - Land with a slight flooding problem.

Class 3 - Land with moderate hazards and / or limitations of soil (light texture), salinity, topography (slope, rapid runoff and erosion), or drainage (temporary water-logging and / or flooding), for sustained irrigated agriculture. Under present conditions this land is considered marginally suitable for irrigation and is expected to have a restricted crop adaptability and to produce yields lower than the Class 2 land. Land improvements (to raise yields and / or crop adaptability) are possible (drainage, levelling, leaching etc.), but they are expected to be definitely more costly than on Class 2 land.

3S - Land with a problem of surface gravel.

3T - Land with a moderate undulating micro-relief problem.

3W - Land with a high water table, and moderate flooding problem.

3ST - Land with a moderate problem of gravel and undulating micro-relief.

3SW - Land with a moderate problem of gravel and a high water table and moderate flooding.

3STW – Land with a moderate problem of gravel and undulating micro-relief and with problems of water erosion and flooding.

Class 4 – Land with such severe limitations (steepness, rockyness, stonyness, severe erosion etc.) that it may be considered permanently non-irrigable.

4T – Land with a severe topographic problem.

The villagers of the upper Gämäsiäb valley, up to about the 1,700 metre contour, are thus fortunate in cultivating land which has few limitations for sustained irrigated agriculture and the production of good yields (see Chapter 4). However, topography is a major constraint in that there is a dire shortage of irrigable land relative to water; the irrigated area at a maximum stretches to only four kilometres across the valley and cannot be increased by any significant amount.

CHAPTER THREE

THE RELEVANCE OF LAND REFORM

In the traditional and generally accepted sense of the term, land reform means the redistribution of property or rights in land for the benefit of small farmers and agricultural labourers[1]. Such a "land-to-the-tiller" policy inevitably involves some degree of compulsion in expropriation and is therefore above all a political question. Professor Lambton has fully documented the history of land reform in Irān and its central role in determining agrarian change[2]. In addition, she has suggested that the creation of a "self-reliant and independent peasantry", which might rightly be deemed to be the main object of land reform, can only be achieved in the long-run if the reform is economically successful[3].

It is the aim of this chapter to examine the changes in land ownership and tenure in Olyā, with particular reference to the eleven villages mentioned in Chapter One, since 1962 - the eve of land reform. But it should be emphasized at the outset that this thesis is concerned specifically with the relevance of changes since 1968, the third stage of land reform, and that the earlier period described in this chapter is intended primarily as a historical backcloth to the whole thesis.

The almost complete absence of source material for Olyā has made it very difficult to reconstruct the history of land ownership and tenure even as late as 1962. Similarly, the exact sequence of

1. Warriner, D. "Land reform in principle and practice", page xiv (1969)
2. Lambton, A.K.S. "Landlord and peasant in Persia" (1953) and "The Persian land reform, 1962-1966" (1969a)
3. Lambton, A.K.S. "Some reflections on the question of rural development and land reform in Irān" (1963)

changes brought about by the three stages of land reform in the eleven villages under study is difficult to establish, particularly as the Department of Co-operation and Rural Affairs in Nahāvand city refused to allow its records to be examined[1]. Furthermore, no cadastral survey has been made and land registration, in so far as it exists, only states in general terms the boundaries of the property and not the actual area. The need for clear delimitation of land ownership, and indeed the value of accurate statistics, has not so far been recognised in rural Irān. Much emphasis was therefore put on fieldwork observation and mapping of land ownership and changes in the eleven villages. Lengthy questionning of the former landlord and crop-sharing classes also enabled reconstruction of the recent past. However, it is notoriously difficult to arrive at the truth in a Persian village. Long periods of oppression have made the people naturally inclined to conceal the truth. Thus gaps and generalisations even within the confined limits of the study area are inevitable.

1. Throughout the collection of background data for this work a notable reticence on the part of the Ministry of Co-operation and Rural Affairs and its provincial offices to provide assistance was encountered.

3.1. LAND OWNERSHIP AND TENURE IN 1962

The outstanding feature of land ownership in Olyā in 1962, on the eve of land reform, was its inequality. By far the greatest part of the land was in the hands of a small number of proprietors, who contracted its cultivation to share-croppers. Before discussing relations between these two classes, it is necessary to describe the composition of the landed proprietors. These can be divided into large landed proprietors and peasant proprietors, with various intermediary holdings, the small landowner group being often only slightly better off than the share-croppers.

3.1.1. THE LARGE LANDED PROPRIETOR

This landowning class can in turn be divided into several groups according to the number of villages owned and its political, social and economic power. The Zafari family formed the most prominent and wealthiest of the landlords (arbāb) in the western part of Olyā sub-district, owning the total land area of nine adjacent villages in the valley - Raziābād, Zafarābād, Bābā Rostam, Amirābād, Tokeh, Fiāzemān, Beyān, Hājiābād, Varāineh - and also of several villages in the mountain foothills to the south - including Rāvand and Tāz-e Nāb (see Table 11 and Figure 9). Their sphere of power also spread into Nahāvand city, where they owned both land and property, and westwards into Soflā and Solgi districts, where reputedly 1,000 hectares was in their hands. The land of the Zafari family was divided amongst its members by inheritance, being handed down from the very powerful Zafar al-Soltān (see Figure 10). This division was complicated by joint ownership among heirs, known as moshā' tenure. For example, on the death of Amir Zafar al-Soltān the land of Beyān, Tokeh and several other villages became the

Table 11 Land ownership in the eleven study villages pre-land reform

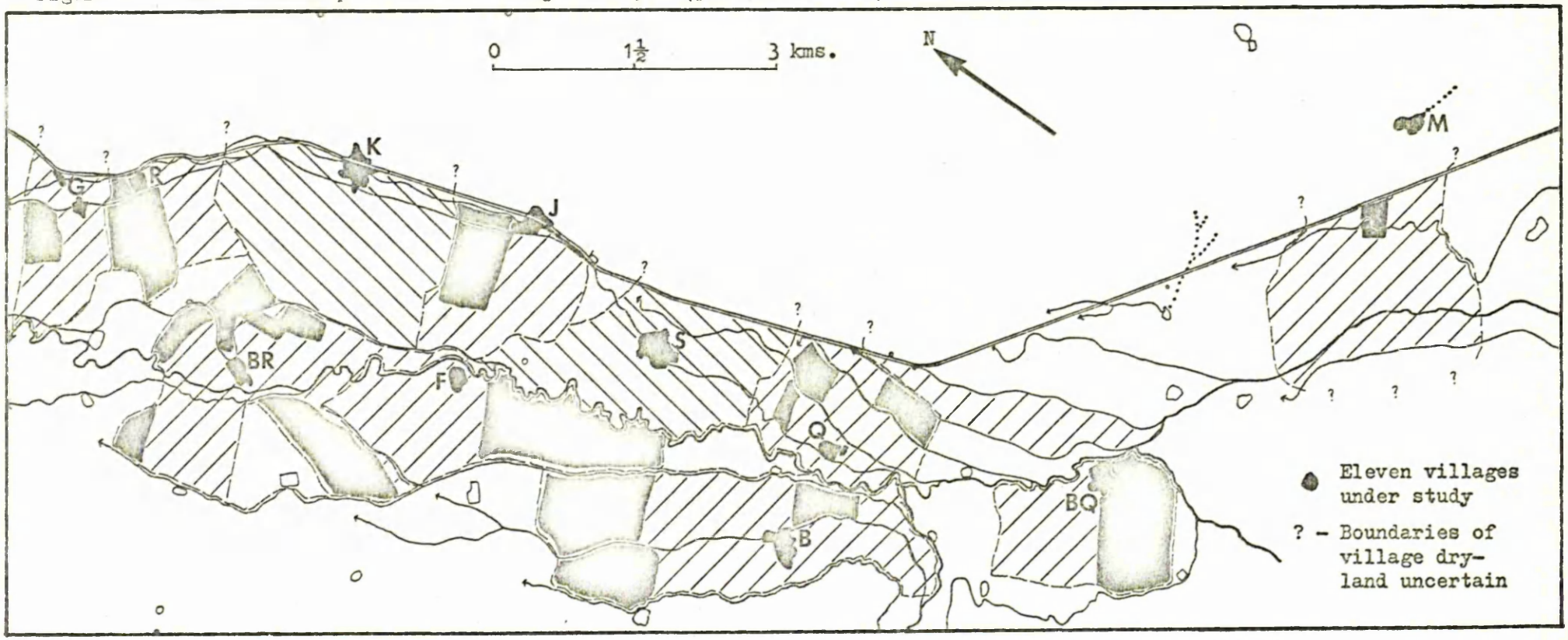
Village	Large landed proprietor and intermediary class	Total irrigated area owned Hectares	Joft (plough-land)
Gol-e Zard	Hāji Dr. Tabibiān	15	3
	Ne'matollāh Rastegāri	x	x
	Vaqf	1.2	0.25
	Ābedin Khosravi	2.5	0.5
	Others	x	x
Raziābād	Khānum Zafari	80	16
Bābā Rostam	Amir Hosein Khān Zafari	240	40
	Sālār Akram Zolfaqāri	60	10
Fiāzemān	'Ali Ehsān Zafari	180	28
½ Beyān (3 dāngs)	Javād Khān Zafari and relations	100	20
Bābā Qāsem	Sālār Akram Zolfaqāri	180	28
Jahānābād	'Abdol Amir 'Ali Mirzā Zamānian	150	30
Qal'eh-e Qobād	Āqā Sharif Gudarzi	55	8
	Rastegāri brothers	60	9
	Masht Qāsemi	25	4
	Mohammad Zarrini (and Āqā Khosravi)	20	3
Milāb	Khān Bābā Khān Yāhvari ('Ali Rezā Khān Abolfathi)	140	28
½ Beyān (3 dāngs)	Morād Rezvāni	50	10
	Hāji Vali Mo'azzami	50	10
	Peasant proprietors		
Kuhāni		300	48/50
Sha'bān		200/350	

Source: Fieldwork, 1973 x - not known

Note: The areas of land held are not all clear, but the essential factor is the earlier power, both political and economic, of the large landed proprietor class.

The term joft is explained more fully in section 3.4.

Figure 9 Land ownership in the 11 villages in 1962 (pre-land reform) and in 1974



---Landlord-owned land in 1962

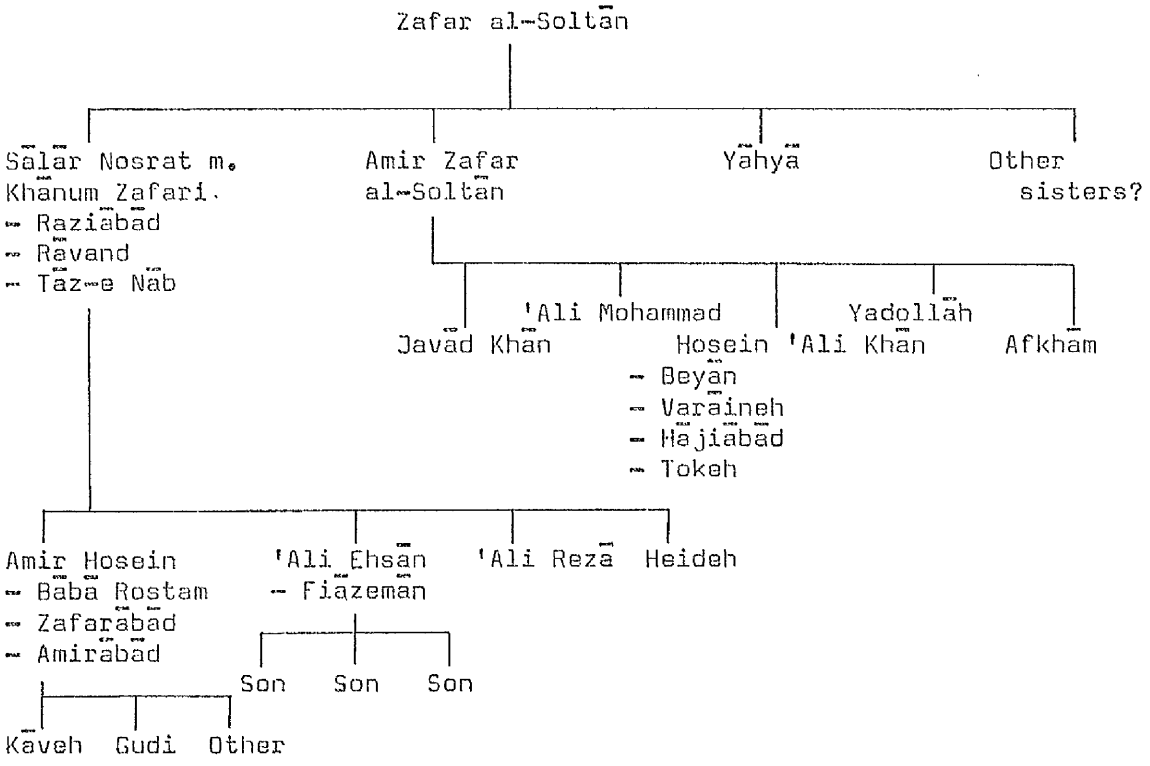
Landlord-owned land in 1974

Khordeh mālek villages, 1962

Small-holder land in 1974

Source: Fieldwork, 1973-74

Figure 10 Family tree of the Zafari family



Source: Fieldwork, 1973-74

joint property of Javād Khān and his three brothers and two sisters. The individual shares were not delimited, each of the joint owners having the right to a specific share of the total proceeds, and Javād Khān administered the property on their behalf.

On the eastern side of Olyā, however, the Zolfaqāri family were the main proprietors, rivalling the Zafari's for political power and prestige. In addition to Bābā Qāsem, which is in the study area, Sālār Akram Zolfaqāri and three of his sons (Taqi, Hosein and Jafār) owned nine villages consolidated in one area: Taqiābād, Ja'farābād, Sālārābād, Hoseinābād, Deh Heydar, Gorg Heydar, Deh Choqā'i, Sefid Khāni (in part), and Abolfathābād.

Apart from these two main landlords, a number of other individuals who owned a single village, or part of a village, are to be included in the large landed proprietor class. For example, Jahānābād belonged entirely to 'Abdol 'Ali Mirzā Zamāniān, and Milāb to Khān Bābā Khān Yāhvari. Finally, a small area of land in Gol-e Zard village was vaqf[1] and has been included here for convenience because of its closer similarity to the absentee landlord than the village proprietor.

The attitude to land among landowners varied slightly according to their class. They invariably looked on the land as a source of gain; but for the two major landed proprietors this had rather more a political aspect than for the smaller ones, such as Hāji Dr. Tabibiān or Ne'matollāh Rastegāri of Gol-e Zard (see section 3.1.2.), for whom the gain was generally more of an economic nature. It should be mentioned, however, that their answers to questions on this subject in 1973 were vague[2]. But it was

1. Vaqf is land immobilized for some purpose, often charitable. In this case the vaqf was a personal vaqf (vaqf-e Khāss), the revenue of which went to the settlor's descendants.
2. They showed little inclination to give carefully considered answers.

discovered that even by 1960 leading members of the main landlord families had considerable sources of income from investments other than in land. 'Ali Ehsān Zafari, for example, had a permanent job with the Ministry of Water and Power in Sāri, 'Abdol 'Ali Mirzā Zamāniān worked in the Ministry of the Interior and both the Zafari and Zolfaqāri families held considerable property in Nahāvand and Tehrān. Furthermore, their younger generation was being well educated, in Tehrān and abroad, and encouraged to become less reliant on their landed income. It may well be that there were already some forebodings about the possibility of losing their landed power. Certainly the landlords must have been aware of a growing tide of feeling against them, even if it was rather muted and expressed only in terms of dissent with their power over irrigation control and water usurpation.

The common characteristic of the large landed proprietors was that they were absentees for much of the year, usually in Tehrān in the case of the two main families. Several of the smaller landlords lived locally, for example Khān Bābā Khān in Borujerd and Hāji Dr. Tabibiān in Nahāvand city. Absenteeism was of course inevitable in cases where they owned several widely separated villages, but the landlords retained a house in each village for their visits, which generally took place at the beginning and end of the crop year when accounts had to be settled and the harvest divided. There were, however, exceptions to this rule; Khānum Zafari was seldom absent from Raziābād for long and relations with the villagers tended to be better for this. During their periods of absence the landowners delegated responsibility for organising their affairs to a representative (namāyandeh) from the village who was paid by a share of the harvest. In the case of villages with several owners, such as Beyān, Gol-e Zard and Qal'eh-e Qobād each owner had his own representative. In general this worked

satisfactorily, for the representative, as a member of the village, was not able to "feather his own nest" at the expense of his fellow - often a close relation. In Beyān, however, the representative of Hāji Vali Mo'azzami originated from the neighbouring village of Qal'eh Qobād and was more of a bailiff; he is supposed to have practised extortion against the crop-sharing tenants, and as a result to have become a petty landowner in his home village (see section 3.1.2.).

It must not be imagined that because most of the land was held by large landowners that large-scale farming was practised. This was not the case. It is true that a general control or supervision was exercised by the landlord's representative, seed sometimes purchased centrally and the irrigation system regulated and maintained from one source. But in the main the large estates were not large producing units and were run, like the small estates, on the basis of the ploughland (joft) or the small-holding. Their essential feature was a division of function between ownership and production. Although Javād Khān Zafari and Amir Hosein Zafari had by 1960 each purchased a tractor, their use was restricted by lack of technical knowledge of their capabilities (see Chapter 5.2.). There was in fact no question of the management of a large-scale enterprise and little reinvestment by the landowners of their large incomes; thus none of the economic advantages of large landownership applied. Nevertheless, it is true that the landlords were at leest patrons of the villages they owned and as such provided the people with a security that comes with tradition and familiarity. In times of economic hardship or natural calamities they did hold the structure of life together by providing credit or a market outlet, even if for their own pecuniary gains.

3.1.2. THE INTERMEDIARY CLASS

Between the large landed proprietor and the peasant proprietor who lived on and worked his own land there were certain intermediary groups. First, there were a number of small "businessmen" from Nahāvand, such as the Rastegāri merchant brothers and Hāji Dr. Tabibiān, a money-lender, who had invested their profits in land neighbouring the city, particularly in Gol-e Zard. Even by 1962 land was still seen by the townsman as offering greater security of investment for his earnings than other fields (and its ownership also considerably increased his social prestige). Secondly, on a smaller scale, a motive for this kind of ownership of land was not an economic one, but the desire to make a garden to which to retire from the town in summer. This type of holding was commonly found in land adjoining Nahāvand city or the village of Gusheh, but also tended to be mixed with ownershipby peasant proprietors near the road in Kuhāni. Thirdly, there were several small landlords who lived on but did not work the land themselves, such as Mohammad "Sardār" Zarrini, who had acquired land as the landlord's representative, and Masht Qāsemi of Beyān. Finally, there was a type of small absentee land ownership in the peasant proprietor villages of Kuhāni and Sha'bān. It occurred when economic pressure had driven the owner or his forebears out, or ambition had induced them to migrate to seek economic advancement in the city. In such cases the villager seldom cut himself off completely from his roots but, like 'Ali Mohammad 'Ali Bakhshi who left Sha'bān to work in the Ābādān oil industry as a young man, retained some land in his original village for security and for his retirement.

The intermediary landowner, in so far as he did not work the land himself but employed labour, usually on a crop-sharing basis, resembled the large landed proprietor. But his social,

political and economic position was vastly different from that of the large landed proprietor in that he enjoyed none of the power and influence wielded by the latter (see Lambton, A.K.S., page 282, 1953).

3.1.3. THE PEASANT PROPRIETOR (KHORDEH MĀLEK)

Peasant proprietorship was not an important form of land-holding in Nahāvand district in 1962. Of the eleven villages under study only two, Kuhāni and Sha'bān, were so owned and from the accounts of villagers it would seem that Kuhāni in the earlier part of the century was owned by a single absentee landlord, Āqā Kāzem. On his death, however, the land was divided between his four sons, who in turn sold their land to the crop-sharing tenants. Several former tenants were in possession of considerable areas by 1962 and formed the most wealthy and prominent section of the village. In Sha'bān, it seems that the land had always been split up amongst small landholders, although three brothers - Hāji Nabi, Hāji Rostam and Hāji Mehdi - had earlier owned the largest holdings (which they leased). By 1962, however, their land had also been divided and sold and there were about 200 small-holders.

Unfortunately there is little information concerning the actual size of the holdings of the peasant proprietors. However, villagers when questionned in 1973 and 1974 agreed that individual holdings were much as today - small in area and fragmented (see section 3.4.). In Sha'bān holdings were for the most part worked as a family concern. But because the pressure on irrigated (and indeed all cultivable) land was high, many were reported as having been too small to afford an adequate living unless the income was supplemented by some outside source such as carpet-weaving and

casual labouring, and it was found that many villagers had worked in Kuwait (see Chapter 5.1.). Nevertheless in Kuhāni there were several larger peasant proprietor families, such as those of Mohammad Jafār Matin and Shirzād Zamāniān (see Chapter 7, Case 3) who jointly owned about 60 hectares (12 joft) of irrigated land and were relatively men of substance, hiring labourers or leasing their land on a crop-sharing basis to members of their families or other villagers.

Although it is very difficult to compare the incomes and standard of living of the peasant proprietor and his crop-sharing fellow, it was generally remarked in Olyā and in the Nahāvand bāzār in 1973-74 that Kuhāni and Sha'bān were better off in 1962. The greater security of tenure enjoyed by the peasant proprietor and the larger measure of independence of character which accompanied it undoubtedly made for better cultivation[1] and better social conditions, and perhaps helps to account for the greater concentration of population there.

3.1.4. THE CROP-SHARING AGREEMENT

This chapter has so far described the position of the landowner, both large and small. The vast majority of the rural population was, however, composed of a crop-sharing class and a "landless" class of labourers, artisans and shopkeepers. It is with the former that this section is concerned[2]. They too were

1. As evidence for this claim it was found that Kuhāni and Sha'bān had a greater area of grape gardens and fruit trees than the other villages (see Chapter 4.2.); ownership of a garden in addition to arable land clearly suggests a more favourable economic position.
2. The number of share-croppers in 1962 is not known. But it is suggested that Table 13 (section 3.3.), which shows the number of small-holders in 1966 and 1973, gives a guide, for it would seem that the land worked by individuals has changed very little.

strictly speaking landless, but by virtue of a verbal contract, recognised both by Islamic law and the Civil Code and regulated by local custom, a certain area of land was handed over to them on a crop-sharing lease by the landlord and it was on this agreement that their relationship was based. Payment to the landlord was generally made in kind. Five elements - land, water, seed, draft animals and labour - were taken into consideration in fixing the shares of the two parties. In theory for each element one share was given to the party supplying it, but a variety of practices was actually found, influenced by the nature of farming, whether irrigated or dry, by the type of irrigation - river or ganāt, and by the crop grown. In the case of irrigated wheat and barley, the division was nesfi, that is half went to the landowner and half to the share-cropper who provided the oxen (gāvband) and labour. The landowner provided the land, water and seed, which was deducted before division from the total harvest. The actual division of grain (and beans) was made on the threshing floor, but the landlord's share of other summer crops and tree crops was normally decided by valuation. Straw was usually not included in the division but went to the share-cropper for his animals. After the harvest the villagers were also permitted to garner the grain and straw from the fields for their own use. The following table shows the relative proportions of different crops received by the landowner (L) and the share-cropper (S) in seven of the villages under study:

Table 12 Division of crop between landowner (L) and share-cropper (S)

Village	Irrigated wheat and barley		Beans 1.		Clover		Grapes & tree crops 2.		Non-irrigated wheat and barley 3.	
	L	S	L	S	L	S	L	S	L	S
Bābā Rostam	1	1	2	3	1	2	1	2	1	3
Kuhāni	1	1	1	2	1	1			1	3
Jahānābād	1	1	1	2	1	3			1	3
Sha'bān	1	1	1	2	1	5			1	4
Qal'eh-e Qobād	1	1	1	2	1	2			1	4
Beyān	1	1	1	2			2	1		
Bābā Qāsem	1	1	1	2					1	3

Source: Rejali, (1960)

Fieldwork, 1973-74

Note: 1. In the case of beans and other summer crops the provision of seed was less important than in the case of wheat or barley; manure and weeding were more important and provided by the share-cropper, who usually received two-thirds of the harvest.

2. Conflicting views were expressed as to the landlord's share of grapes and tree crops. This could be because of the more varied relationships involved in their cultivation, whether share-cropping, in which case a one-third share was generally taken by the landlord, or renting, or by an appointed gardener being paid in cash or more often in kind.

3. The share-cropper provided the oxen and labour (and also often the seed) and the landlord only the land.

In addition to the share of the crop which went to the landlord, the share-cropper was subject to certain levies and personal services, based on the ploughland (joft). The most common was liability to transport the landlord's share of the crop from the threshing floor to his granary (ambār) in the village or to a merchant in Nahāvand for sale; the most onerous was labour service, such as assisting in the annual repair of irrigation canals and the construction of roads.

The share-cropper also paid a share of the crop or a due to certain village officials for their services as, for example, to the head-man (kadkhodā) for his local administrative work, to the dashtbān who was responsible for the protection of the village fields from thieves, to the miller, bathman, blacksmith, barber, carpenter and to the mosque and mollā (ākhund). Many of these dues were also found in the peasant-proprietor villages of Kuhāni and Sha'bān, where in addition payment was made to officials in charge of water distribution.

Perhaps the most important consideration for the share-cropper was that he had no real security of tenure[1]. Some slight security was theoretically provided with regard to sown crops, tree crops, and if the share-cropper owned his own house, which were collectively known as a'yān[2]. Ownership of the a'yān could be registered. But the landlord could in fact evict the share-cropper

1. Lambton, A.K.S., page 295 (1953)
2. The general tendency was for the landowners not to encourage the share-croppers to make gardens. The reason for this was that the landowners knew that the possession of gardens was likely to make the share-croppers more prosperous, and feared that easier circumstances might make them independent. See Lambton, A.K.S., page 302 (1953)

at will, though to do this he had to buy the a'yān. It was not possible to ascertain reliably to what extent eviction in fact occurred in Olyā, but it would seem to have been very unusual, for tradition was strong. In the prevailing circumstances both landlord and share-cropper had an interest in the status quo, although the latter was occasionally driven by poverty to leave of his own accord. In keeping with custom too, although the share-cropper had no right to transmit his holdings by inheritance, the landlord would usually make an agreement in the event of his death with one of his sons, who would continue to cultivate the land in his place.

In spite of the unfavourable conditions under which the bulk of the share-croppers lived, there was little obvious resentment or demand for change. Morale was low and they were invariably resigned to their position of subservience. Moreover, "lack of leadership from the landowner and his agent in the technical field was but infrequently compensated by the peasants themselves. Until comparatively modern times ..... the peasantry were isolated by lack of training and educational facilities from knowledge of management and agricultural improvement. Similarly, the peasant had access only to limited and expensive sources of unorganised credit"[1], (see Chapters 5 and 6). Although there had been some minor improvements in water distribution, several schools built and levies by the landlord had been slightly less harsh in the late-fifties, the pressures remained heavy. With no say in village affairs and no security of tenure there could be no major change in the morale of the villagers which was fundamental to a reform of rural conditions.

1. McLachlan, K.S. "Land reform in Irān", page 686 (1968)

3.1.5. THE "LANDLESS" CLASS (KHOSHNESHIN)

Under this heading are included the inhabitants of the village who were neither landowners nor share-croppers. Their exact number in 1962 is not known, but village officials estimated that roughly half the working men were "landless". By occupation the majority were agricultural labourers (barzegar), working often for the share-croppers. They were differentiated from the share-croppers by the fact that they had no contract with the landowners and provided, of the five traditional elements of production, only labour. They were paid in cash or kind, sometimes on a daily basis, more often as a percentage of the crop. In Beyān and Bābā Rostam the "landless" labourers could find work on behalf of the landlords on land which they had exempted from the general distribution among the share-croppers, with tractor for ploughing, seed and implements provided by the owner, in return for a specified and inevitably minor share of the crop. Some of the "landless", especially in Kuhāni and Sha'bān, were shopkeepers[1], artisans or minor village officials such as the shepherd or bath-keeper, and they also often engaged in agricultural work at harvest time. In addition, it would seem that the khoshneshin figured largely in seasonal migration for employment outside the village, especially to Kuwait (see Chapter 5.1.).

1. Shopkeepers were generally the richest and most secure section of the "landless" class, engaging in money-lending and wholesale trade in addition to their normal shop sales of fruit, vegetables and household goods.

3.2. THE LAND REFORM LAWS

During the sixties a series of laws was passed in Irān which brought about extensive changes in the ownership of land and the relationship of landlord and share-cropper.

The main provisions of the Land Reform Law of January 9th, 1962[1], which came to be known as the first stage, were: (1) limitation of land holdings to a maximum of one village, whether held as one village or as parts of several villages totalling six dāngs[2], any surplus to be sold to the government; (2) fixing of compensation to be given to the landowners on the basis of the taxes they had paid; (3) allocation of the land bought by the government to the share-croppers actually working it without upsetting the field layout of the village (nasaq), so that normally the share-croppers would continue to cultivate the land which they held when the transfer was made, payment to be made in ten (later increased to fifteen) annual instalments; (4) making membership of a co-operative society a condition for the receipt of land. Orchards, tea plantations and woodland (provided the 'arseh and the a'yān both belonged to the landowner) and land worked by mechanized means at the date of the passing of the law (provided the labourer was paid a wage in cash or kind and as long as it was so worked) were exempted from the provisions of the law. Land which had been held on a leasehold tenure on 5th December 1959 was not to be subject to sale to the government until the lease expired, provided that not more than five years of the lease was still to run. In the case of land constituted into a private or personal vaqf before 5th December 1959,

1. Technically, this bill was merely an emendation of the law of 17th May 1960, but in fact it was a new law (see Lambton, A.K.S., pages 56-63)
2. Every village in Irān consists of six dāngs.

each of the beneficiaries was allowed to draw revenue from up to the maximum holding permitted by the law, that is one village.

On 17th January, 1963, five Additional Articles were issued laying down the procedure to be adopted in those villages that were not subject to purchase by the government under the 1962 law. The landowners were given the choice of (1) renting the land to the occupying share-croppers for a cash rent based on the average annual income of the three preceding years, (2) selling the land to the occupying share-croppers, or (3) dividing the land between themselves and the share-croppers in the same proportion as the crop was divided under the crop-sharing agreement, the share-croppers to pay two-fifths of the price of the land reckoned at the highest rate for the region in ten equal annual instalments. Mechanized land within the confines of a village, provided it did not exceed 500 hectares, was exempted from the articles. Note 6 to Article 1 laid down that landowners could only retain up to 30 hectares of rice-growing land. Article 2 stated that charitable ouqaf were to be let to the occupying share-croppers for a cash rent for 99 years, the rent to be reviewed every five years. Article 4 extended the period for the repayment of compensation to the landowners from ten to fifteen years. The Additional Articles, together with their regulations, became known as the second stage of the land reform.

The regulations were not issued until July 25th, 1964. They departed somewhat from the original conception of the Additional Articles and gave landowners five choices for the settlement of their land. The two new methods laid down were: (1) the formation of an agricultural unit with the agreement of the majority of share-croppers and landowners, to be run by a managing committee of three persons, one chosen by the share-croppers, one by the landowner or landowners, and one chosen by mutual agreement of the two parties (Article 17), and (2) the purchase of the share-croppers'

rights by the landowner (Article 45).

As in 1962 membership of a co-operative society was again a condition of receipt of land. Similarly, land had also to be registered, and the share-cropper was not given the title deeds to the land until he had fully paid up his instalments for it to either the landowner or the government, and thus he was not able to sell his holding immediately (see section 3.4.).

A third stage of land reform was passed by the government in 1968-69. The first step was for the establishment of agricultural corporations (sherkat-e zerā'i), or joint stock agricultural companies , comprising two or more villages. Their aim was to deal with the question of uneconomic holdings and the excessive fragmentation of farms, to increase output by mechanization, to facilitate irrigation and to put manpower to more economic use. They were to be run under the control of the government, which was to invest considerable sums of money in them. By end-September 1974 the Ministry of Co-operation and Rural Affairs reported that there were 65 corporations in existence in Irān. The second step under the third stage was for the abolition of tenancies except in charitable ouqāf and the sale of the land to the occupying cultivators, who were again required to join the local co-operative society.

3.3. THE CHANGES BROUGHT ABOUT BY LAND REFORM IN OLYĀ

The first stage of land reform had very limited direct impact on land ownership and tenure in Olyā as a whole and in the eleven villages under study in particular. The only large landed proprietor substantially affected was Sālār Akram Zolfaqāri. Of the ten villages under his control nine were sold to the government and only Bābā Qāsem retained as his "chosen" village. Thus his political and economic power was considerably eroded. But he did manage to use his influence to some degree with the land reform department and retain small areas in Taqiābād (2 joft) and Ja'farābād which he claimed were already "mechanised" - that is, they had been ploughed by tractor at least once and were being worked by fixed paid labour, albeit payment was still in the form of a share of the crop.

The Zafari family was affected far less. Khānum Zafari was forced to transfer several villages, including Rāvand and Tāz-e Nāb, to the cultivators working the land, but retained Raziābād; Amir Hosein Khān lost Amirābād but kept Fiāzemān. Likewise, Khān Bābā Khān Yāhvari sold the land he held in Sefid Khāni and Nesār to the government and 'Abdol 'Ali Mirza Zamānian lost Kalindar-e Soflā and Kalindar-e Olyā, but the former retained all of Milāb and the latter Jahānābād.

Indirectly, nevertheless, the results were considerable. That even limited changes had actually taken place in tenurial conditions and the element of subservience in landlord-cultivator relations destroyed in a few villages induced widespread excitement and not surprisingly gave rise to aspirations for changes in villages not affected by the land reform. Several of the more influential share-croppers attended the first national congress of peasants in Tehrān on 8th January, 1963, and returned full of enthusiasm for it

and for the "White Revolution"[1]. Those villagers who received land exhibited a new confidence in their independent status and looked on the co-operative societies as their future source of hope. People felt they could stand up at last against those who had formerly extorted from them, and that they were no longer faced with only the alternative of submission or flight.

Finally, the landlord class realised for the first time that its landed power was really at stake. The reform provoked anticipatory moves by Javād Khān and Amir Hosein Zafari who each bought a tractor and "mechanized" especially their larger holdings of land in Soflā sub-district but also a little of their land in Beyān and Bābā Rostam.

The second stage was of much greater relevance to the study area and indeed to the whole of Olyā. It was largely put into practice in the summer of 1965 and 1966, although in several cases where there was disagreement settlement was not completed until 1969. The course that was chosen with few exceptions was the third form of settlement, and land was divided in the same proportion as the wheat crop was shared under the existing crop-sharing agreement. Thus, half the irrigated land of the village was left in the hands of the landlords and half was divided amongst the nasaq holders[2] (see Table 13 and Figure 9). Deimi land rights were also variously delimited.

1. Lambton, A.K.S. Unpublished fieldnotes.
   It was at the national congress that the Shāh announced the six-point reform programme (later extended to twelve points), approved in a national referendum on January 26th 1963, which he later referred to as the beginning of the "White Revolution" and which has since become known as the "Revolution of the Shāh and People".
2. Villagers holding the rights, agreed with the landlord, to cultivate a ploughland, or part of a ploughland.

Table 13 Land ownership in the eleven study villages in 1966 and 1973

Village	Small-holders				Former landlords		
	Number of small-holdings		Total irrigated area		Former land-lords still holding land	Total irrigated area	
	1966[1]	1973[2]	Ha.	Joft	1973[2]	Ha.	Joft
Gol-e Zard	36	42	x	x	Hāji Dr. Tabibiān	7	1.5
					Rastegāri brothers	x	x
					Ābedin Khosravi	1.2	0.25
Raziābād	23	25	40	8	Khānum Zafari	40	8
Kuhāni	176	160	300	50	-	-	-
Jahānābād	64	119	75 (100 in 1974)	20	'Abdol Amir 'Ali Mirzā Zamānian	75 (50 in 1974)	10
Bābā Rostam	63	72	120	20	Amir Hosein Khān Zafari	120	20
Fiāzemān	47	47	90	14	'Ali Ehsān Zafari	90	14
Sha'bān	225	204	200	x	-	-	-
Qal'eh-e Qobād	98	82	80	12	Āqā Sharif Gudarzi)	x	12
					Rastegāri brothers)		
					Masht Qāsemi)		
Beyān	120	115	110	20	Javād Khān Zafari	50	10
					Morād Rezvāni	25	5
					Hāji Vali Mo'azzami	25	5
Bābā Qāsem	87	106	90	14	Zolfaqāri brothers	90	14
Milāb	58	55	140	22	Khān Bābā Khān	10	2

Source: 1. Department of Co-operation and Rural Affairs, Nahāvand.

2. Fieldwork census, 1973.

Note: All figures must be accepted with some reserve.

x = not known - = zero

Table 14 The price of land paid by eight of the sampled farmers at land reform

Village	Farmer	Area of irrigated land Ha.	Joft	Price (riāls)
Gol-e Zard	Hosein Zamanian	1.5	¼	5,666
Kuhāni	Hosein Fariād Ras	1.5	¼	6,000
	Ahmad Qaponvāri	8.0	2	30,000
Bābā Rostam	Mohammad Āqā Zafari	6.0	1	24,000
Beyān	Nur Khodā Fasihi	1.5	¼	6,700
	Darvish Morād Zarrini	1.8	⅓	8,500
Bābā Qāsem	'Ali Morād Zolfaqāri	3.5	½	14,000
Milāb	Bakhzād Abolfathi	3.0	½	10,000

Source: Fieldwork, 1973-74

Note: It was not possible to check the accuracy of these figures, but given that they were collected separately from the eight farmers and show a good degree of consistency there is reason to believe that they may be accepted as reasonably accurate.

Land with trees and grapes was generally not divided; the land remained in the ownership of the landlord who continued to lease it to the smallholders on a two-third crop share agreement in their favour. Of great importance was Article 33 of the law which ensured that the rights to a fair share in the rotation of the water of the Āb-e Nahāvand river and the use of the irrigation canals, traditionally under the control of the landowner, were transferred with the land to the new owners (see Chapter 4.1.). The share-croppers divided land amongst themselves on the same basis and in the same proportion as their holdings under the former division of the land into ploughlands (see section 3.4.). Houses occupied by the share-croppers were also left in their possession.

In the case of the village of Bābā Qāsem the landlord had first proposed to lease the land to the cultivators, but the rent had been high and finally, following discussions with the land reform officials, division was agreed upon as a compromise. Settlement by division was favoured by the share-croppers because they wanted to be "free" and therefore able to cultivate the land transferred to them without interference. Thus, half went to the share-croppers who with their families numbered about 1,000 persons, and half to the three sons of Sālār Akram[1]. In the village of Beyān, which was held by Javād Khān Zafari and his relations on a joint tenure, division was chosen. Division was also agreed upon in Raziābād, Gol-e Zard, Bābā Rostam, Jahānābād, Fiāzemān and Qal'eh-e Qobād in the area under study, and in Morādābād, Dar-e Ebrāhim, Tokeh, Sorkh Kandi, Deh Choqā'i and Nesār in the main valley.

Several exceptions to the choice of division of land may be noted, however. In Milāb and Varāineh, for example, tenancy

1. Professor Lambton in her fieldnotes stresses the harshness of the landlords' rule in Nahāvand prior to reform.

agreements were reached for the whole village area, though the landlords in each case retained small areas of fruit and poplar trees. But subsequently (after the third stage of land reform) the land was sold to the occupying tenants. In the case of the two peasant proprietor villages of Kuhāni and Sha'bān it was not easy to elucidate the facts, but it seemed that a mixture of the first three procedures of reform was chosen. Settlement was more between individuals than village groups of share-croppers and took rather longer. In the case of Mohammad Jafār Matin, Shirzād Zamānian and Taqi Matin, three of the larger peasant proprietors of Kuhāni, division was chosen. There were no cases in Olyā of choices four and five being adopted.

Although the original clear-cut spirit and intentions of the 1962 land reform law were rather weakened by the second stage and those villagers who were able to settle under the first stage were rather envied, the people welcomed the 50:50 division of land with enthusiasm. Their independence from the landlord and security of tenure were of profound importance. The small-holder for the first time began to feel that his voice counted for something and to take a greater interest in his land and his village. He was also drawn into wider social contacts than ever before, since he now had to deal directly with the various governmental departments, banks and agencies such as the sugar beet factory whereas formerly the landlord had undertaken these matters[1]. Possession of land boosted his morale and aspirations. Similarly there was the opportunity to market excess produce in Nahāvand city, where demand was growing, and the encouragement of an increased availability of irrigation water (see Chapter 4.1.). Thus, the new small-holder began to work harder, reduce the fallowed area, intensify production and experiment

1. McLachlan, K.S. "Land reform in Irān", page 712 (1968)

with new crops (see Chapter 4.2.), chemical fertiliser and pesticides (see Chapter 5.2.). It is true that suspicion of the government's intentions and fear of the landlords continued to exist after reform, but confidence grew rapidly and by 1973 there was clear evidence that the former share-croppers as a group had "found their feet" and were prospering.

From the foregoing it will have been noticed that the second stage of land reform was not weighted too heavily against the small group of large landed proprietors under study. Their dominant political and social influence was considerably reduced but economically they retained large areas of fertile land with water supplies (see Table 13). Although the law itself did not permit them to choose the location of their land, in practice they did and were thus able to retain the best areas in terms of soil and irrigation. In addition they retained land already mechanised which amounted to some fifty hectares in Beyān. The land reform officials also encouraged them to consolidate their holdings as more practical for future mechanised farming; their blocks of land stand out clearly on Figure 9 . It may have been thought by government planners that land reform would have stimulated the large landed proprietors to take a more active interest in the land remaining in their possession and make up their losses by more efficient farming. But fieldwork found them to be still largely absentee and unwilling to farm the land themselves (see Case 8 in Chapter 7). As has been already mentioned , they had other jobs outside agriculture and were technically unqualified. They showed an overall disinterest and disdain in re-directing sufficient capital to their land, either in machinery or field improvements, to make it economically efficient, yet not surprisingly welcomed the considerable revenue it still produced with open arms.

The basis of their individual farm management, such as it was, still rested in large part on their representatives, each paid by a share of the crop, and reflected closely pre-land reform days. For example, Shirzād Zamāniān, the representative of 'Abdol Amir 'Ali Mirzā Zamāniān of Jahānābād, received about 10% of the total harvest (see Case 3 in Chapter 7). Two main cash crops were grown - wheat and beans. Wheat cultivation was partially mechanised by the landlords: ploughing was done by their own tractor or a hired one; the seed was sown and the growing wheat irrigated by hired labourers (kārgar) who were paid in cash or usually kind at harvest time; and the harvesting was carried out on contract by a hired combine for an agreed percentage of the grain - usually 12%. Unirrigated wheat and irrigated barley were also worked in the same manner. Only three landlords, Javād Khān, Amir Hosein Khān and 'Ali Ehsān Zafari, owned tractors and the latter had a share in a combine harvester with several villagers from Fiāzemān (see Chapter 5.2.). Beans, on the other hand, were generally worked by the villagers, both those owning land and the "landless" class, on a form of share-cropping agreement. This resembled the pre-reform agreement with the khoshneshin who provided only the labour; the landlord ploughed the land and provided all the imputs at his own expense and took two-thirds of the crop[1]. Sugar beet, sunflowers, and chick-peas were also cultivated on this same arrangement in Fiāzemān and Bābā Rostam. The small areas of fruit trees owned by the landlords in Milāb and Jahānābād, and retained in full under the land reform, continued to be cared for by appointed gardeners who received a share of the produce as payment. Javād Khān, who planted a four hectare orchard in 1974 in Tokeh, was also managing

1. It should be noted that most of the small-holders who took on labour usually did so on this same basis (see Chapter 7).

it on this basis. Finally, land planted with grapes or poplars (tabrizi) under the land reform was left in the ownership of the landlord; cultivation, however, remained in the hands of the former share-croppers who received usually two-thirds of the produce. Even the few animals, mainly cows, owned by the landlords were let out to villagers on a reciprocal arrangement - on the agreement that dairy produce would be made available to the landlord when present in the village and all progeny would be his. Of the landlords who had retained considerable areas of land under division, only 'Abdol Zamānīān of Jahānābād had sold land to the villagers subsequently. As may be seen from Table 13, he had sold about 25 hectares of irrigated land by 1974 and a considerable area of deimi land along the road-side for houses to the villagers of Jahānābād and Kalindar-e Olyā following the flood which destroyed much property in both villages in 1971.

In addition, several landlords leased land to the villagers on an annual basis for a cash rent. Khānum Zafari of Raziābād, for example, leased about 20 hectares of her 40 hectares total in 1973 and charged 10,000 riāls or 11,000 riāls per hectare depending on the location of land as rent. Although no long term security was offered and the rent was not low, the farmer was free to choose his crop, generally an intensive one of vegetables or pulses, and the land was much in demand both by local villagers and outsiders from even as far away as Borjak, some 10 kilometres distance in the mountains, where irrigated land was short.

Finally, mention must be made of the "landless" class, who were rarely included in the categories of persons to whom land might be transferred. Urban onlookers, such as Bill, have tended

to stress the dissatisfaction of the "landless" with reform[1]. He has suggested that "the resulting situation has seen the wealthier peasants become wealthier and the poorer peasants, poorer". This may have been the case in the first few years of reform in Olyā. Professor Lambton, on the other hand, has suggested some early discontent amongst those who did not qualify for land[2], but added that she found, for example, in Shamsābād village near Dezful in 1966 that "there were a good many khwushnishīnhā ....., many of whom worked in the gardens ..... (whose conditions, it was alleged) had improved in recent years because wages had risen"[3]. Bill has further suggested that by 1970 tensions were building up between the small-holder and "landless" classes and that the latter who had not benefitted from reform were becoming increasingly restless[4]. However, fieldwork in Olyā revealed a situation very different from his dramatic picture but mirroring Professor Lambton's views. Agricultural wages had risen (see Chapter 5.3.) and the number of opportunities locally for more remunerative employment, especially in the service sector, had increased. Large numbers of "landless" males had also left their village for work elsewhere, particularly in Tehrān but also in other cities and often in the Persian Gulf region, on a semi-permanent basis (see Chapter 5.1.). Thus, the economy of the "landless" class was prospering and there was little sign of dissatisfaction.

1. Bill, J.A. "The politics of Irān", page 14-15 (1972)
2. See also Miller, W.G. "Hosseinābād: a Persian village", page 594 (1964)
3. Lambton, A.K.S., pages 249-250 (1969a)
4. Bill, J.A., pages 15 and 146 (1972)

The first step of the third stage of land reform[1], which was for the establishment of farm corporations, was not felt in Nahāvand district until spring 1973 when the Arān farm corporation was established in seven villages[2] on the western side of Khezel sub-district. It was run by a government-appointed manager and began to receive considerable government-directed investment in the form of machinery, roads, buildings and land improvements. Those villagers holding land in the farm corporation exchanged their land for a share in the corporation, for which they received a proportionate share of the annual profits. The villagers had no direct responsibility for the cultivation of the land but were, when needed, employed by the corporation as agricultural labourers. The declared aim is to eventually hand over the corporation to its members. However, as Professor Lambton has emphasized, it seems doubtful that it will meanwhile be possible to maintain the interest and confidence of the farmers[3].

Olyā sub-district lies some 60 kilometres from the Arān farm corporation and at first very little response was shown by the villagers for the principles behind and organisation of the corporation were understood by very few people. In the autumn of 1973, however, the Nahāvand farm production co-operative (sherkat-e ta'āvoni-e towlid)[4] was established in the neighbouring Soflā sub-district at Barzul and included several other villages. This was

1. The second step, which concerned the abolition of tenancies, affected only small numbers of villagers in Kuhāni and Sha'bān.
2. Do Āb, Deh Kohneh, Deh Lor, Arān, Deh Now, Sarāb Maharān and Qarah Benas.
3. Lambton, A.K.S., page 358 (1969a)
4. The Farm Production Co-operative Law was approved by the government on 28th February, 1971.

also government-imposed and resembled the farm corporation in its aims of abolishing the fragmentation of holdings and introducing centralised large-scale mechanization, but land ownership remained with the villagers, although they had to agree to pool their land under collective management. At the same time a rumour spread in Olyā that Sha'bān, the largest village by population, was to be developed as a rural township (shahrak-e rustā'i), or rural development centre[1], and in due course would become the centre for another farm corporation. In both the villages comprising the Arān farm corporation and the Nahāvand farm production co-operative, where good land and adequate water were available, there was strong hostility to these projects. To the villagers in the area under study, where land and water provide for a still higher yield, they appeared a complete reversal of the original reform which had stimulated production because it had given the farmers security of tenure and independent ownership. The villagers found it hard to believe that the land which some had only recently received could now be taken away from them. Although for the "landless" class and poorer small-holders this further development represented no direct threat, the more astute have since recognised that large-scale farming requires less labourers and that their future is equally in doubt.

Signs of a weakening of government support for the small-holders and land reform as originally conceived may, however, be found in the last few years of the sixties, most notably in the failing momentum of the development of the co-operative movement at the village level, and are reflected in the study area (see Chapter 6.1.)[2]. In the face of growing support for private

1. This was officially announced in summer 1974 when construction of a small hospital commenced there.
2. Lambton, A.K.S., pages 345-6 (1969a)

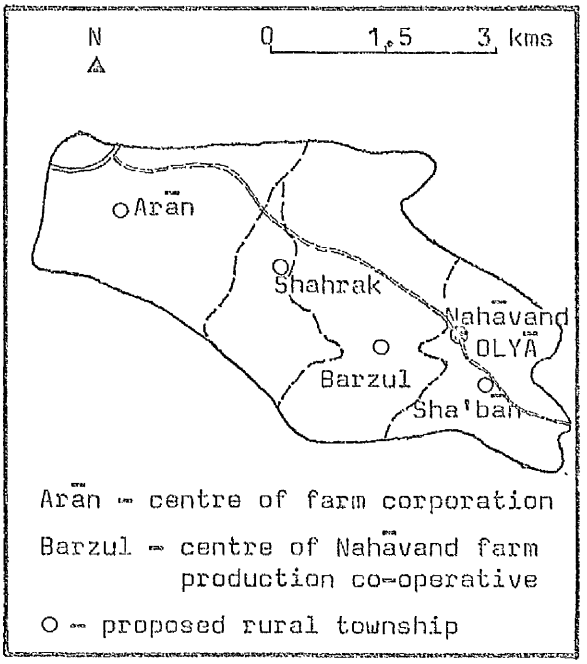
investment in agriculture and highly capitalised and mechanised corporate farming as the best means to increase production, the government turned away from its support of village co-operatives. It was argued that the village small-holders as a body had neither the capital nor the experience to increase production. Thus the co-operatives, both in Olyā and nationally, soon found themselves starved of the credit they needed, marketing assistance and agricultural supplies.

Similarly, since the incorporation of the Central Organisation for Rural Co-operation into the newly established Ministy of Co-operation and Rural Affairs in 1967, government officials have increasingly taken away the independence of the village co-operatives on the pretext of the need for "direction" and "leadership". Most recently the number of co-operative societies, of which there was originally one in each of the eleven villages under study, has been reduced to four (see Chapter 6.1.). Conversation with the small-holders during fieldwork made it clear that the societies, which initially, despite their weaknesses, were regarded with a certain pride, no longer command any loyalty from their members and have largely ceased to be effective instruments of agricultural development. Rather they are looked on warily as yet another instrument of government and the officials who run them with distrust.

The loss of confidence in the co-operative society and the fear of being deprived of their land and being forced into a farm corporation has created an atmosphere of uncertainty in the minds of both the small-holders and the landlord class as to the security of their title to the land. In the summer of 1974 this was being expressed in doubts concerning the wisdom of long-term investment to improve their holdings and extend their operations, both of which have been notable features of recent years, as the following

chapters will show. At this stage, just over a decade since land reform officially began, there would seem to be a strong case in the study area for delaying any measures which will further destroy the confidence, independence and investment of the farmers. Moreover, the farm corporation and the farm production co-operative have not so far proved themselves capable of producing significant volumes of crops any more cheaply or efficiently then the farmers and, indeed, current research suggests that the new units are wasteful and inefficient[1].

Figure 11 Location of collective farms in Nahāvand



Source: Fieldwork

1. McLachlan, K.S. "Irān", E.I.U., No. 2, page 12 (1974)

3.4. FARM SIZE AND FRAGMENTATION

The land area of the eleven villages under study was from early times divided into ploughlands (joft)[1], which meant the amount of land a yoke of oxen could cultivate[2]. The equality of shares was not strictly quantitative, but also took into account quality. The size and shape of the ploughland therefore varied, due to differences in for example soil type and irrigation supply, the common factor being that the holdings were such as could be worked by one plough or a yoke of oxen. The ploughland was expected to provide for the needs of a family group and, under the crop-sharing agreement with the landlord, was regarded as belonging to the head of the family. Allotment of the joft by the landlord varied somewhat depending on the means of production at the disposal of the cultivator, his farming skill and often on his relation with the landlord or his representative. Some share-croppers worked only half a ploughland or even less, whereas other more prosperous villagers held two or more. The ploughland consisted of several strips in different parts of the village, which in turn was divided into a number of parts by type of crop cultivated or fallow area. In this way each crop area was made up of numerous separate plots of which an individual cultivator might own one or more. Only narrow balks or irrigation channels separated the plots of land and the village thus took on an open-field appearance. In general a communal rotation was practised and united the village, though it did allow for some slight variations (see Chapter 4.2.).

Although the economic interests of the large landed proprietors in theory would best have been served by consolidation,

1. Division in the village of Milāb was also referred to by sha'ir of which there were 96.
2. Lambton, A.K.S., page 4 (1953)

the traditional arrangement of the village was largely preserved. Professor Lambton suggests that this was mainly because it was more convenient for the landlords to keep the allotment of dues and services proportionate to shares and holdings, and furthermore that this obligation would not be affected by the subdivision of a holding among co-heirs[1]. In some parts of Irān the landlord used to periodically redistribute the holdings in order to prevent the tenant from getting a vested interest in his holding. Although redistribution was uncommon in Olyā, permanency of tenure was not assured, and the share-cropper had no means of re-dress if the landlord revoked his crop-sharing agreement.

Land reform in 1962 and 1964 was not concerned with changing the field layout of the village land, for it was feared that this would result in an initial fall in production which would leave the government open to criticism from those opposed to reform. It did not attempt to consolidate holdings consisting of several parcels of land because the difference in quality of land was generally accepted as good reason for fragmented holdings and to have forced consolidation on a reluctant rural population would have destroyed their confidence which it was the aim of reform to build up. Nor did it attempt to remedy the small size of many holdings, except in so far as it forbade their further break-up, since this problem was bound up with the more complex question of other sources of employment and training for those displaced. Further, since at that time there was no shortage of labour in the towns, there was little immediate advantage in consolidating holdings in order to economise on effort. Nevertheless, some changes in the layout of the village land did take place under the second stage of reform. In the villages where division was chosen as the form of settlement, the share of the large landlord

1. Lambton, A.K.S., page 6 (1953)

class and the share of the small-holders respectively were consolidated (see Figure 9). However, the shares of the latter within their portion remained the same. The planners behind land reform argued that in due course the economic advantages of land consolidation, for the use of machinery and improved efficiency of irrigation and so on, would become apparent and the demand for it among the small-holders would spread.

During fieldwork in 1973, therefore, an examination was made of whether the "apparent" advantages of land consolidation had in fact been recognised or acted upon by the village small-holders over the decade since land reform commenced. Data was collected by questionnaire survey for a 5% random sample of 51 small-holders in the eleven villages (see Appendix 1). But emphasis was also put on mapping the location of parcels of individual owners as being more accurate in the absence of a cadastral survey, even if time-consuming. Little research work has been done on farm size and fragmentation in Western Irān and it is hoped that this section may go some way to rectifying this deficiency, and also help to clarify the problems the small-holder in Olyā is currently facing in managing his farm as a unit and in increasing both his productivity and standard of living. Finally, it is hoped that this data may provide a guide for the future consolidation of holdings.

Fieldwork suggested that many of the conceptions underlying the division of the land were losing their validity. For example, although the term joft was still used as a measure for alloting the payment of village officials and for the administration of irrigation water, measurements by hectare or one-tenth of a hectare, known locally as the jarib, were in use among the more progressive villagers of Kuhāni and Sha'bān, and elsewhere, with the introduction of ploughing by tractor, changes in field layout at land reform and

recent land transactions, the significance of the joft has been lessened.

The survey revealed a great range in the size of the farm as a whole, in the size of individual parcels of land and in the degree of fragmentation of holdings. Considerable village to village differences were also found. The total area of land owned by the 51 farmers was 148 hectares, averaging 2.9 hectares per farm. These figures are exclusive of unirrigated land[1]. The largest farm had 15.35 hectares and the smallest 0.15 hectares. 84% of the farms had four hectares of land or less, 23% one hectare or less and only 4% (or two farmers) had over ten hectares (see Table 15). Thus the general smallness of holding is a major problem for increasing production and income from the land.

Table 15 Variations in size of the sampled farms

Size (ha.)	No. of farms	(%)	Total area (ha.)	Average area/farm (ha.)
0-1	12	23.5	8.13	0.68
1.1-2	12	23.5	19.23	1.62
2.1-3	11	21.6	27.65	2.51
3.1-4	8	15.7	27.96	3.5
4.1-5	-	-	-	-
5.1-10	6	11.7	38.18	6.36
10.1-15	1	2	11.77	11.77
Over 15	1	2	15.35	15.35
Total	51	100	148.27	2.9

Source: Fieldwork, questionnaire survey, 1973

Sha'bān was found to have the smallest average size of farm at 1.3 hectares (see Table 16). Population pressure on the land is particularly acute there for the people of Sha'bān, being individual

1. The total area of this, however, was extremely small and amounted only to 19.8 ha. in 1973 (20.9 ha. in 1974) (see Table 24in Ch. 4.1.).

owners of their land in the past, were not restricted by a landlord from sub-dividing holdings by inheritance. Not surprisingly, many people have sources of income other than agricultural land (see Chapter 5.3.). In Kuhāni, also a khordeh mālek village, population is smaller and pressure on the land is less marked. Raziābād is considered unreliable for generalisation as only one farmer was sampled there. Of the remaining former landlord-owned villages only Bābā Qāsem stands out as having a particularly low average farm size of 1.83 hectares. Land relative to water is very short there and the division of the land with the landlord under the second stage of land reform resulted in this situation. Many of the villagers have left for Tehrān, Kuwait and elsewhere. Of the small-holder class remaining many supplement their incomes by share-cropping the land of neighbouring villages. Thus in Taqiābād Darvish Zolfaqāri and two relations farm 12 jarib of wheat and beans for half the crop. One of the larger small-holdings in Bābā Qāsem, one joft in area, was owned by the manager of the co-operative society, but it was found that 25 people were living from this in 1973.

Table 16 Village differences in farm size

Village	Average size of farm (ha.)	Average number of parcels
Gol-e Zard	2.49	11
Raziābād	1.72	5
Kuhāni	3.09	8.8
Jahānābād	3.6	13
Bābā Rostam	3.25	13
Fiāzemān	3.87	16
Sha'bān	1.3	5.6
Qal'eh-e Qobād	6.76	18
Beyān	2.55	13.3
Bābā Qāsem	1.83	10.6
Milāb	3.3	8.3
Total	2.9	10.7

Source: Fieldwork, questionnaire survey, 1973

The size of separate parcels of land on individual farms similarly varied considerably. For example, Shāh 'Ali Zafari of Fiāzomān had one parcel of 1.3 hectares, three of 0.5 hectares, two of 1 jarib, one of only 200 square metres and other parcels of various sizes (see Table 17 and Figure 30 in Chapter 7). In this same way Amir Khān A'zami of Beyān had two parcels of 1 hectare and five below 2 jarib. In these circumstances crop rotation is not a straightforward practice, for the use of land for different crops must be carefully considered. Similarly, the use of machinery is limited.

Table 17 Two case studies of the varied size of individual parcels of land

Shāh 'Ali Zafari, Fiāzemān (sq.m.)				Amir Khān A'zami, Beyān (sq.m.)			
1.	2,000	10.	9,000	1.	6,000	8.	2,000
2.	4,500	11.	5,000	2.	6,000	9.	1,000
3.	3,000	12.	5,000	3.	1,500	10.	10,000
4.	13,000	13.	1,000	4.	1,500	11.	1,000
5.	5,000	14.	4,000	5.	10,000	12.	4,000
6.	5,500	15.	1,000	6.	6,000	13.	1,500
7.	750	16.	10,000	7.	2,200	14.	8,500
8.	2,000	17.	750				
9.	2,000	18.	200				
		19.	500				

Source: Fieldwork, questionnaire survey, 1973

The degree of fragmentation was particularly marked, averaging over ten separate parcels per farm. It ranged from one piece of land owned by Nabi Navvābi of Kuhāni (and purchased from one of the peasant proprietors in 1962) to 29 pieces owned by Hāji Safiollāh Zarrini of Qal'eh-e Qobād. 37% of the sample had over ten pieces of land (see Table 18). Disregarding Raziābād, Sha'bān

was again found to have the smallest average number of parcels per farm at 5.6, reflecting population pressure on the land (see Table 16).

Table 18 Number of parcels of land

Number of parcels of land	Number of farms	%
0-5	15	29.4
6-10	17	33.3
11-15	7	13.7
16-20	8	15.7
21-25	1	2
26-30	3	5.9
Total	51	100

Source: Fieldwork, questionnaire survey, 1973

Two village case studies, of Kuhāni and Fīāzemān, may help to clarify the above data. They are presented in map form and may be compared with the information in Table 16 (see Figure 12). The scattered distribution of the plots of the sampled farms makes it clear that consolidation of land has to-date failed to materialize. The average number of parcels of land in Kuhāni was 8.8 and in Fīāzemān 16, and would appear a major constraint for future agricultural development. The small size of holdings in some cases has led the owner to supplement his income either by non-agricultural employment (see Chapter 5) or by leasing and share-cropping the land of others. Mohammad Nabi Navvābi, with one piece of land of 1,500 square metres, was found to be share-cropping over two hectares of irrigated land in seven separate plots in Kuhāni belonging to Sarjali Bahirai for just one-third of the crop. Shāh 'Ali Zafari of Fīāzemān, on the other hand, has over six hectares of land. However, it has to support 19 members of his extended family (which includes three married sons and their families) and only by increasing his income from sheep-herding and a tractor (which one of the sons manages) has

Figure 12 Fragmentation of farms in Kuhāni

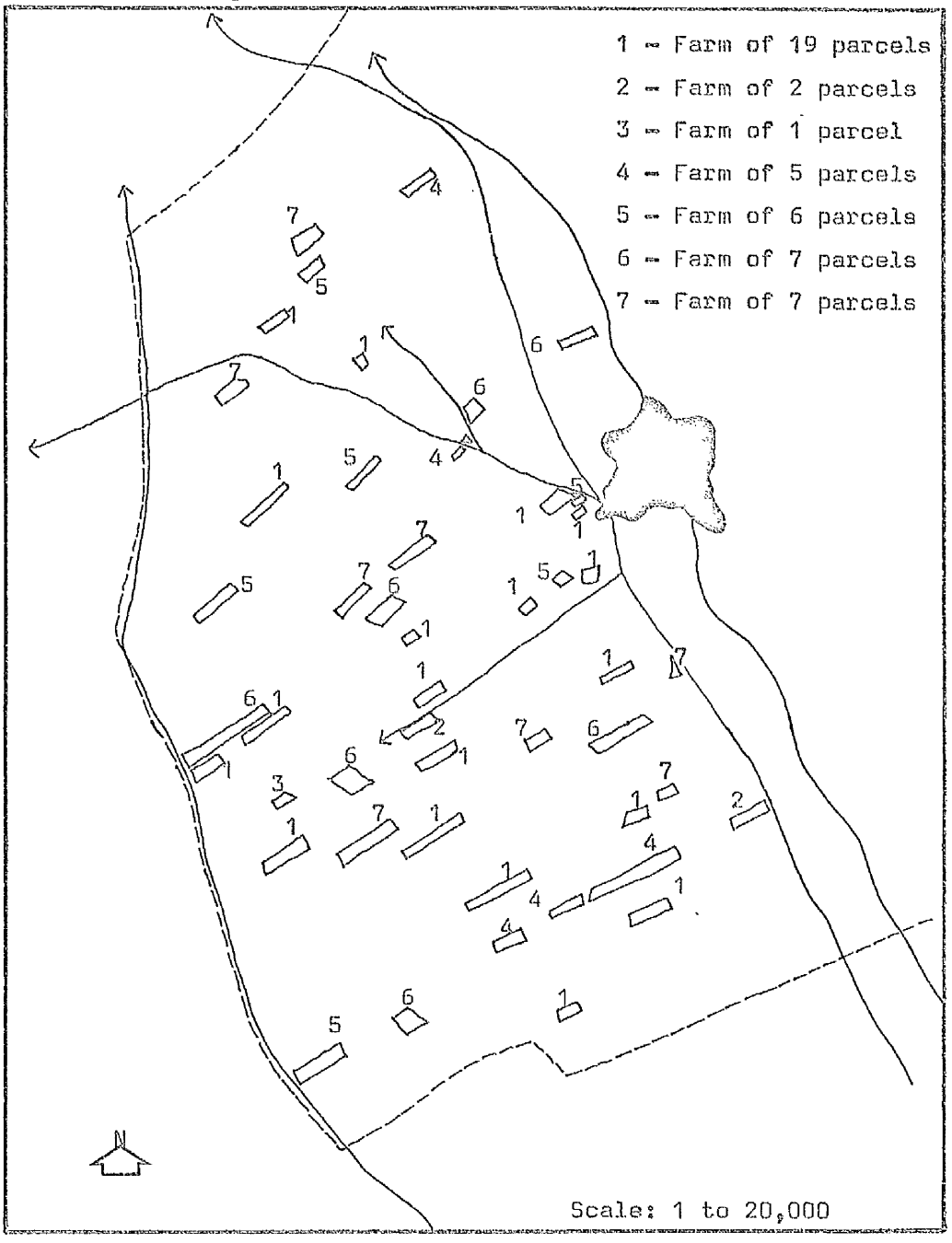


Figure 13 Fragmentation of farms in Fiāzemān

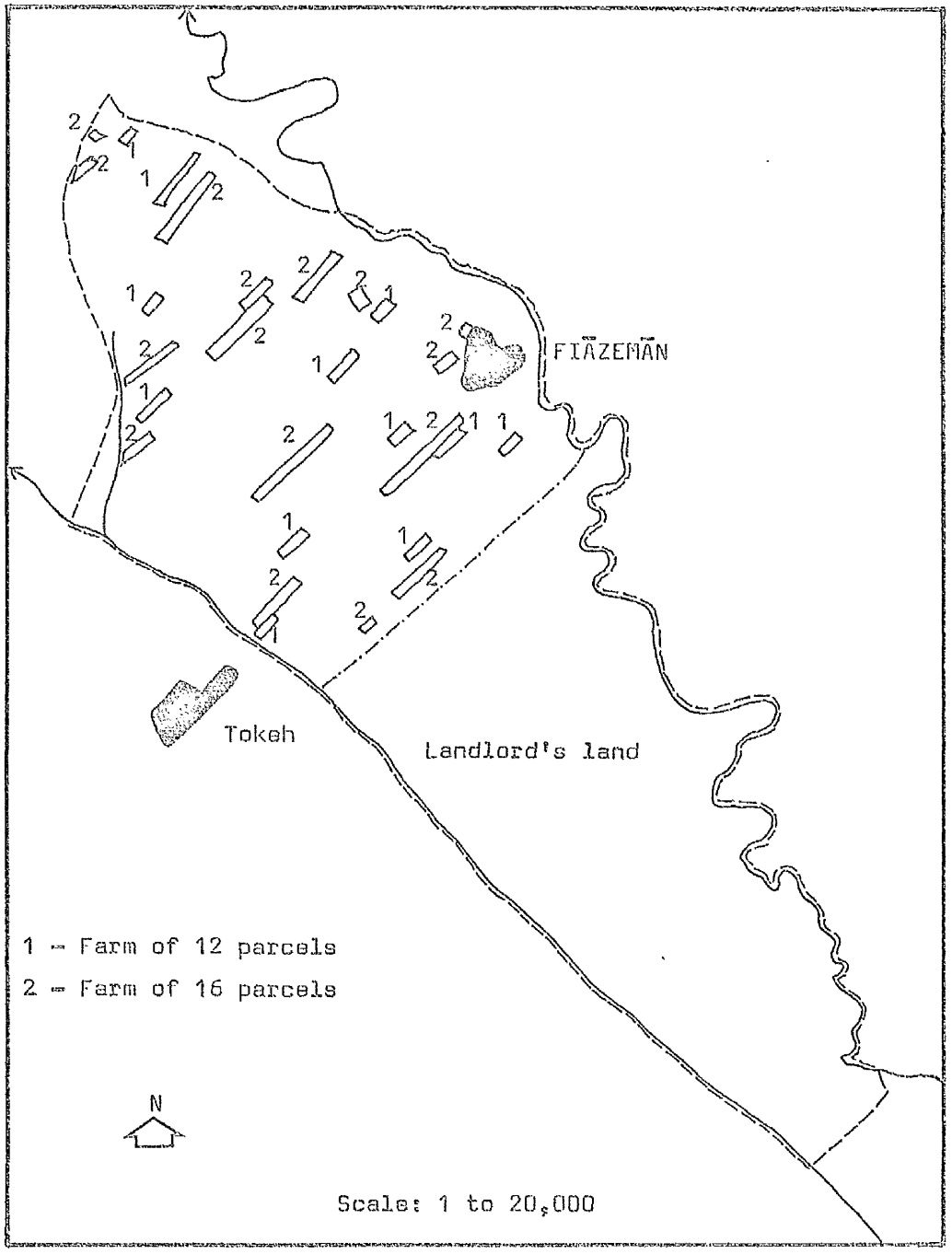
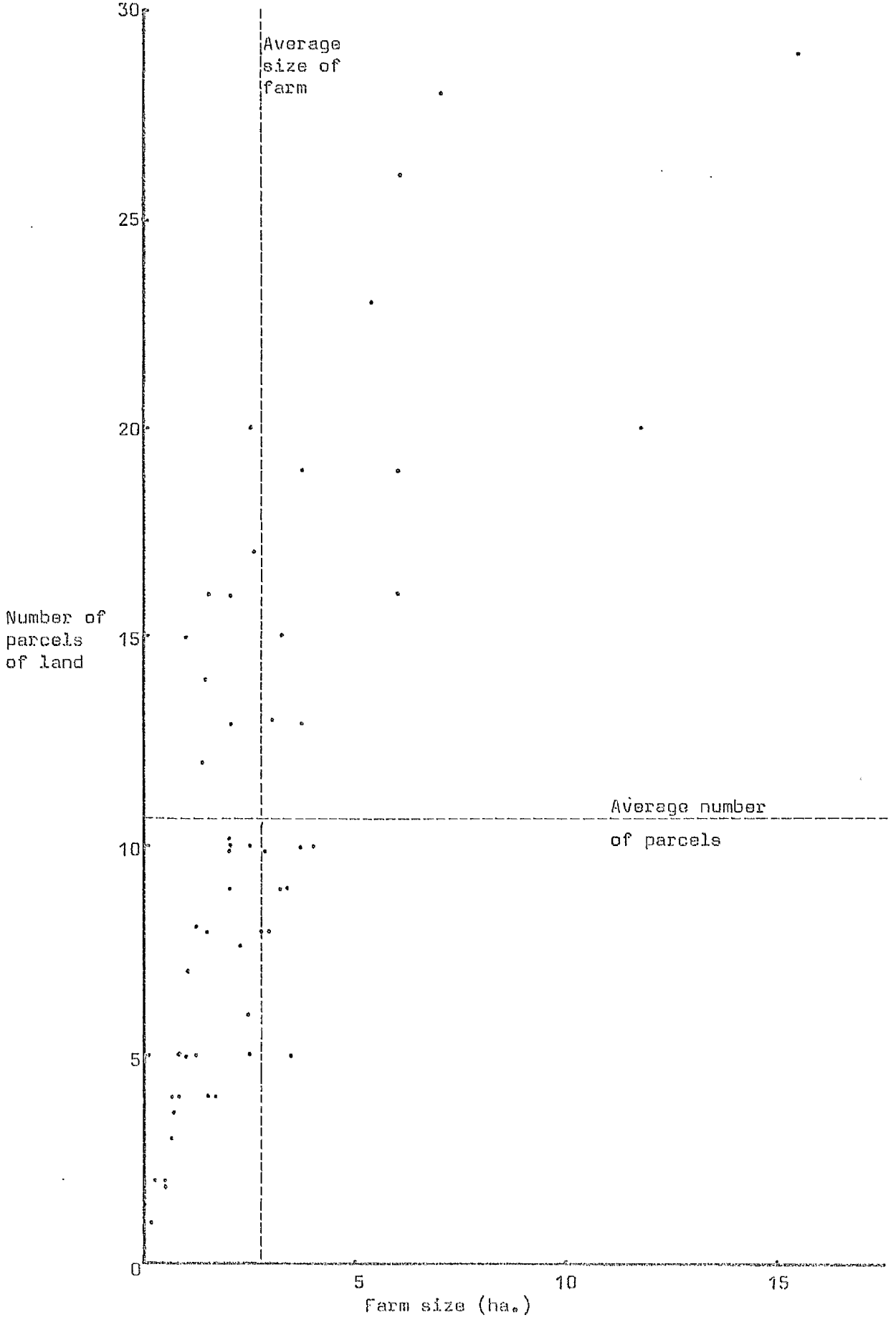


Table 19 Scatter graph of number of parcels against farm size for the 51 farms in the sample



Source: Fieldwork, questionnaire, 1973

he managed to be successful (see Case 6 in Chapter 7).

The unirrigated areas that are cultivated should also be mentioned, although of far less significance in total area or productive capacity. They also tend to be fragmented, small plots and are generally at a greater distance from the village than the irrigated land. Fiazeman has no rights to deimi land for cultivation, but does graze its sheep in spring and summer on common mountain pasture land (see Chapter 5.2.). In the other villages 18 (35%) of the sampled farmers planted 20 hectares of deimi crops in 1973, but when questionned in 1974 all reported low yields due to shortage of precipitation (see Chapter 4.1.3.).

Of the farmers questionned during fieldwork the majority recognised that the parcellation of their holdings and the small size of plots were a hinderance to them. Time was wasted in travelling to scattered plots which might be three kilometres apart in Beyan and further if deimi land was under cultivation. Likewise, the use of machinery was somewhat restricted by problems of access across open fields. They also agreed that their holdings were generally too small in size to allow them to increase their total production substantially, but added that water was plentiful and to some extent made up for land shortage. But the farmers did not suggest that fragmentation and the size of farm might be holding back crop production to an important degree. This will be more closely examined in Chapter 4.2.. It is therefore clear that as yet the farmers on the whole do not recognise sufficiently the need for consolidation to motivate them to do a great deal about it themselves.

There were, however, some small, but perhaps significant, signs of change in 1973 and 1974. The most remarkable was the purchase in Kuhani village of a two hectare block of land in the

midst of the village land area (sahrā) in 1973 by three brothers from Tehrān who, in an unprecedented move, fenced in their parcel, rented a house in the village and began to farm the land themselves, cultivating fruit trees, vegetables and flowers. In 1974 they bought another one hectare block of land which they also fenced in. This disrupted both the open-field custom and landscape of the main valley and, though it might be thought that the villagers of Kuhāni would have strongly objected to this intrusion, in fact general opinion was one of admiration for the brothers' courage and agreement that consolidation and fencing made good economic sense. Several other small-holders in Kuhāni, Raziābād and Bābā Rostam subsequently also fenced in the parcels of land in which they had planted fruit trees. Of equal significance was the attempt by a large group of villagers from Beyān, on their own initiative, to persuade the Department of Agriculture to help them, by a subsidy, collectively to plant a 20 hectare consolidated block of fruit trees. Unfortunately the department would not agree to support them, but their efforts caused a great deal of earnest discussion in both Beyān and nearby villages.

Finally, mention should be made of the increasing transactions in land in recent years. A growing number of villagers, especially former peasant proprietors, were found to be actively selling parcels of land. This was especially true of the villages close to Nahāvand city or the main road, such as Gol-e Zard and Kuhāni respectively, where the demand of townspeople for land for a garden has increased considerably. But it was also found to a lesser degree in all the villages under study. It would seem that improved economic opportunities outside agriculture are encouraging many villagers, especially the younger ones, to leave the village and sell their land. In this situation of change land prices have risen

rapidly. Land near the villages in 1974 was fetching 50-75 riāls per square metre; land away from the villages about 10-20 riāls per square metre.

In conclusion it would seem that the small size and fragmented nature of holdings are constraints to agricultural development in the study area but their importance should not be over-estimated at the present time for, as Chapter 4.2. will show, crop production has shown a major improvement in recent years. In due course there seems every reason to believe that the advantages of land consolidation, for the use of machinery and the increase of per capita productivity, will become apparent and the demand for it among the small-holders will spread, given encouragement in the form of financial and technical assistance.

CHAPTER FOUR IRRIGATION AND LAND USE: PRESENT POSITION AND RECENT CHANGES

In Chapters 2 and 3 an examination of the physical and tenurial factors relevant to agriculture has been made, but before going on to examine the closely connected changes in land use and crop patterns in the study area, there is one subject inextricably bound up with the question of agrarian change which must first be dealt with, namely, irrigation.

4.1. IRRIGATION

"Mountain rivulets and streams provide water for irrigation, being deviated by canals to both sides of the valleys. In these higher zones the density of cultivated lands relative to available land is much greater than in the lower plain or piedmont zone. Complicated water works conduct the water to minute fields and terraced agriculture is often of an ingenious kind. The work of generations has shaped the sedentary agricultural landscape and crop diversification exists together with an important fruit growing complex. These zones suffer most from shortage of land and the distance to market centres."

- A study for the modernization of peasant life and animal husbandry in the Zagros, Memorandum to Plan Organisation of Irān by Italconsult (1960)

Although the study area receives substantial year-round supplies of surface water, particularly from the large karstic spring at Sang-e Sorākh, it would be far from realistic to assume that water has not in the past been, nor may not in the future be, a limiting factor for agriculture. It should be pointed out that the present comprehensive network of canals developed only gradually and that until the last few years, when the government accepted

responsibility for water control, widespread inequalities existed in water distribution which led to much hardship and discontent, and great amounts of water were being wasted by leakage and inefficient control.

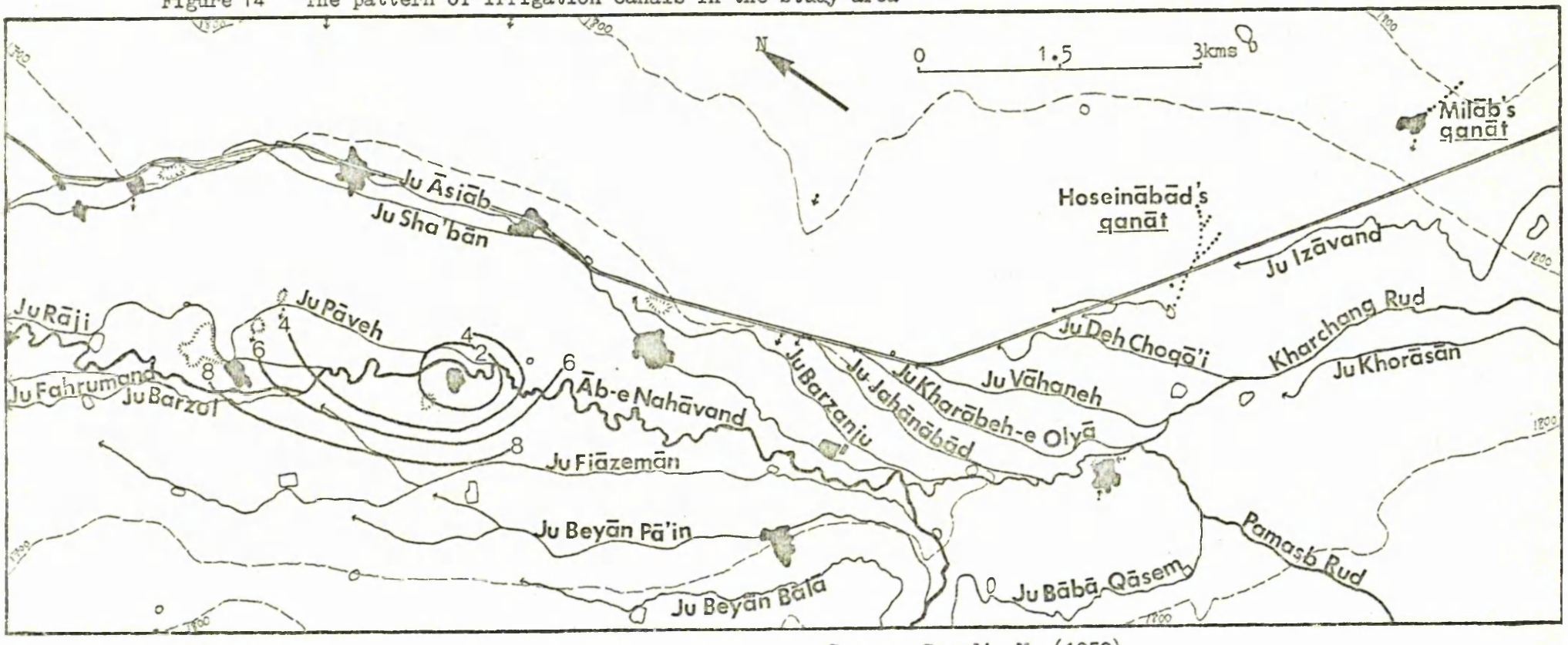
The evolution of the pattern of irrigation canals in the Gāmāsiāb valley is not clear, and records seemingly non-existant. Local village elders have little knowledge of its history but emphasize its antiquity. The network that has emerged follows the contour lines of the valley closely, extending to the limits that topographical conditions allow, some 1,700 metres, and suggests a gradual intensification of irrigation as the increasing density of settlement necessitated a corresponding rise in agricultural production.

Water is led off to the area under study by six main, free-flow canals from the Āb-e Nahāvand river: Bābā Qāsem (and also from its main drain), Upper and Lower Beyān, Fiāzemān, Sha'bān and Pāish; and six smaller canals from the Kharchang Rud: Izāvand, Khorāsān, Vāhaneh, Jahānābād, Kharābeh-e Olyā and Barzanju (see Figure 14). These and a number of other canals also serve several villages in the valley and the large orchard-garden area of over 550 hectares below the city of Nahāvand which are outside the direct scope of study.

The total area of land served by all these canals in Olyā as far as the lower edge of Nahāvand city is about 5,000 hectares (see Table 20)[1]. The largest and most important canal is the Sha'bān canal, which runs for about thirteen kilometres, irrigates about 2,000 hectares of land and, according to the Irrigation Department, can carry 2,400 litres of water per second. It diverts much of the

1. Several canals, originating from the river at Bābā Rostam, also carry water outside the Olyā into the Soflā sub-district.

Figure 14 The pattern of irrigation canals in the study area



River

Irrigation canal

Qanāt

Spring

Contour lines (metres)

Depth of water table (metres) below ground surface

Source: Samadi, M. (1959)

Air photographs, 1966

Fieldwork, 1973-74

flow of the river below the confluence of the Gāmāsiāb and Kharchang Rud during the summer months.

Table 20 Approximate area irrigated by the main canals in Olyā sub-district

Canal	Area (ha.)
Upper Beyān	260
Lower Beyān	450
Bābā Qāsem	450
Fiāzemān	650
Sha'bān	2,000
Pāieh	150
Total	3,960

Source: Rejali, 1960

Fieldwork, 1973

Table 21 The irrigated area in the eleven villages

Village	Irrigated area	
	(Ha.)	(joft)
Gol-e Zard	70	12
Raziābād	80	16
Kuhāni	300	50
Jahānābād	150	30
Bābā Rostam	250	40
Fiāzemān	180	28
Sha'bān	200	
Qal'eh-e Qobād	160	24
Beyān	240	40
Bābā Qāsem	180	28
Milāb	150	24

Source: Fieldwork, 1973-74

Note: Figures are only approximate.

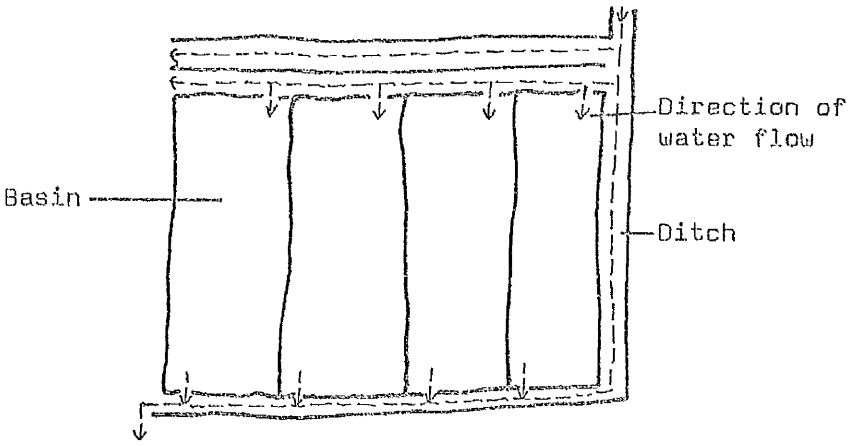
Water is delivered from the main canals to the land by a main channel or jub, as it is locally called, from which a lattice-work of smaller jubs carries it to the cultivated plots. At the field level irrigation is managed in two main ways. The most common is by inundation with the jubs either set close together, dividing the field into long narrow basins, or spaced more widely as border dykes, so that less land is taken up by the channels. Furrow irrigation is also practised, particularly for pulses and grapes (see Figure 15). The number of times irrigation water is given to wheat and barley is normally four, to beans thirteen, clover eighteen, sugar beet sixteen, garden crops eleven, and other summer crops ten or twelve. The amount of water required is usually reckoned at about one cubic metre per second for some 1,000-1,400 hectares of winter crops and twice as much for summer crops.

Drainage is accomplished efficiently and simply by using the river as the main drain. The jubs as they lead downhill in turn act as both distributors and collectors of excess water, finally draining into the river. At the village of Fīazemān, for example, the Pāieh jub collects surplus irrigation water from the land below Jahānābād and Kuhāni and distributes this, together with additional river water, to the lower land of Bābā Rostam.

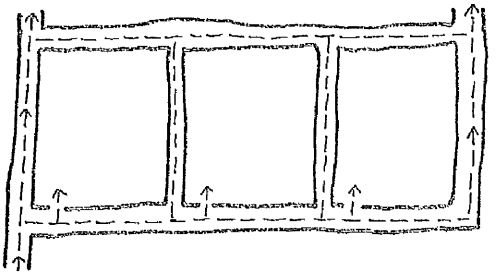
Excessive water in some jubs, especially on the steeper slopes in Beyān, has over the course of time caused erosive damage, but the problem of gulleys is minor. Indeed the small farmers in 1973-74 seemed well aware of the dangers of erosion by irrigation water and on the whole managed water-handling very skilfully. At trouble-spots trees have often been planted to strengthen the banks of channels or sand-bag barriers constructed to slow down or redirect the flow of water. Gulleying was found to be a major problem only on land owned by the former landlords due simply to the lack of care at the due time and regular attention.

Figure 15 Methods of irrigation in Olyā

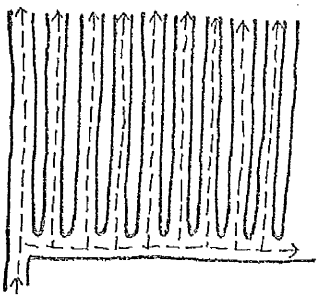
1. Border dyke



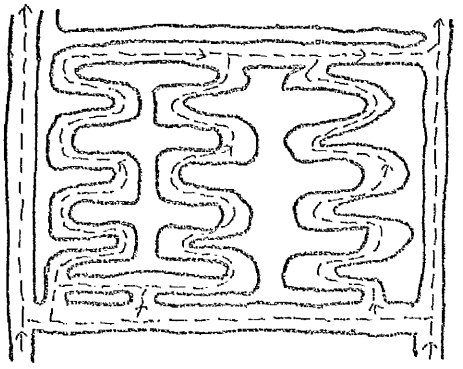
2. Ditch and basin



3. Straight furrow



4. Snake-shape furrow



Source: Fieldwork, 1973-74

4.1.1. THE IRRIGATION SYSTEM PRE-1968[1]

During the late 1950's the owners of land along the lower reaches of the Sha'bān canal, and especially city people with valuable orchards and gardens, complained increasingly to the representative of the Irrigation Institute[2] in Nahāvand that the reticulation system was unjust and leading to unnecessary hardship, which culminated, in the dry summer of 1959, in their fruit trees being damaged by drought. (The crops had been irrigated only 2-4 times instead of the necessary 10-12 times). They requested the authorities to take strict measures towards the protection of their rights and the proper distribution of the Gāmāsiāb water.

Their complaints were investigated in the summer of 1960 by a joint team from the Ministry of Agriculture and F.A.O., led by M.A. Rejali, which was authorised to examine the existing system of irrigation and to make recommendations for its improvement. Rejali's report[3] documented several major shortcomings and proposed possible solutions:-

1. Water was drawn off from the river without the use of regulators and without regard for the interest of the cultivators lower downstream. Thus, the Bābā Qāsem, Upper and Lower Beyān, and Fiāzemān canals served only half the area under irrigation, yet diverted about two-thirds of the flow of the Gāmāsiāb river, to the

1. The law of water nationalization came into effect on 29th July, 1968.
2. The full title is the Independent Irrigation Institute, but it will be referred to as the Irrigation Institute in the following pages. It was established by the law of May 20th, 1943, under the supervision of the Ministry of Agriculture, with the intention of giving the state a wider control over irrigation than was envisaged by Islamic law (see Lambton, A.K.S., page 224, 1953).
3. Rejali, M.A. "The Nahāvand irrigation scheme: present and proposed", Tohrān (1960)

detriment of the Sha'bān canal which was left with a grossly inadequate supply for its needs (see Table 22).

Table 22 The unequal flow of the main canals, 1960

Month	Flow of Gāmāsiāb (litres/sec)	Flow of the 4 canals (L/s)	Flow of Sha'bān canal (L/s)
June	2,600	1,840	760
July	2,600	1,840	760
August	2,550	1,805	745
September	2,500	1,785	715
October	2,150	1,470	680

SOURCE: Rejali, M.A., 1960

NOTE: The accuracy of these measurements was questionned by W. Lawley in 1963 but he agreed that they showed the correct measure of the problem[1].

This unequal division was based largely on the principle sanctioned by Shi'i law that the villages nearest the source of water received water first[2].

Even when the Sha'bān canal did carry a larger flow of water, in response to occasional special requests from the mayor of Nahāvand, this was generally for a short period only - less than 24 hours - and much of the water was taken in the first two villages that were served by it.

2. The second point, the proper distribution of the water, is closely linked with the first: the landlords who owned the villages upstream above the Sha'bān diversion also automatically had the major influence on the diversion of these canals and were

1. Lawley, W. "The Nahāvand irrigation scheme; proposed modifications", Tehrān (1963)
2. Lambton, A.K.S., Chapter 10 (1953)

controlling the misappropriation of water. The dispute over water rights between the upper and lower users (the landlord families of Zafari and Zolfaqāri, and the city landowners) had been simmering for some time before it came to the boil in 1959-60.

3. On the other hand, the power of the Irrigation Institute was minimal and blatantly inadequate. It neither had the full responsibility necessary for the effective control and regulation of water use in the valley nor a sufficient budget to finance irrigation improvements[1]. Thus it could not control the amount of water entering the canals. Similarly, there were no regulations governing the subsequent distribution of water on any canal except for the Sha'bān, where from 8-12 a.m. the water belonged to Sha'bān village, from 12-4 p.m. to Jahānābād and Kuhāni, from 4-5 p.m. to Raziābād, from 5-6 p.m. to Gol-e Zard, and from 6 p.m.-8 a.m. to the city of Nahāvand, but even here no supervision was maintained. Water division in the individual villages was, however, fairly managed, with officials (ābiār) paid by the landlords or villagers supervising the delivery of water.

4. Great amounts of water were wasted along all the canals, especially the Sha'bān, by inefficient control of off-takes and by leakage. For example, the flow of the Upper Beyān canal - the first canal to take water from the river - was measured as 400 litres/second at the point of diversion; but at Sorkh Kandi village it was only 160-220 litres/second. Yet between these two points only a few hectares of land were irrigated from the canal, and the rest of the water went to waste. Rejali estimated that about 40% of the water let into the head of all the canals ran to waste. A major weakness of the Sha'bān canal was its length and the large number

1. The date that water dues were first collected in Nahāvand is not clear.

of offtakes - about 260 - from it; there were no control gates and at the set hours the farmers would take water by opening a hole in the canal bank. Moreover, these diversions in general carried a much greater quantity of water than was needed for irrigation and many openings were often only partially closed after the irrigation was terminated and water went to waste. By reducing canal losses to the more acceptable figure of about 20%, Rejali pointed out that not only could a greater area of land be irrigated but also more intensive crops with higher water requirements could be cultivated. Seepage losses, however, were found to be small; on some canals a hard marl was noticed, and therefore canal lining was not considered to be a necessity.

5. The intensity of cultivation over the past decade had been steadily increasing and the fallowed area of irrigable land reduced (see section 4.2.). In particular white beans which required frequent irrigation in the hot months of late summer were being widely grown. Even steep land not well suited to irrigation was being brought into cultivation and served by the upper canals.

6. Finally, 1959-60 was a "dry year", with below average precipitation in total and in spring in particular, and summer temperatures were high. Total water availability from the river was thus less than normal and exacerbated the drought conditions in the lower region of the Sha'bān canal and indeed of all the canals.

Rejali suggested that first and foremost a strong central irrigation authority must be established with sufficient responsibility and funds to take full control of the reticulation system and its improvement. Only then could co-ordinated measures to correct the unequal distribution of water and its excessive wastage be implemented and supervised. Such measures should include:-

1. The distribution of water from the Gāmāsiāb river among the

canals strictly according to their needs. This could be effected by a distributor on each canal near the point of offtake, with excess water being returned to the river for use downstream. The irrigation authority would determine the amounts required for each canal at varying times of the year and set the distributors accordingly.

2. Decreasing the number of water offtakes on all the canals, especially the Sha'bān, by about two-thirds, and installing diversion gates to control the flow of water and prevent unnecessary wastage after an irrigation period. The farmers should divide the water from each gate among themselves by constructing secondary canals parallel to the main canal. Some of the current offtakes could be controlled or stopped up by very small structures; others would need a few metres of lining. To accomplish this properly, the first step should be a hydraulic survey of each canal.

3. Regular maintenance of canals and minor repairs, including the correction of grade along certain sections, to make the flow of water more efficient. The farmers' advice should be sought on problem areas for irrigation.

4. Close co-operation between the extension service of the Department of Agriculture and the irrigation authority to instruct farmers in improved cultural practices[1].

Rejali pointed out that all these measures would be expensive, but that the result would be a recognition of the potentially large surplus of water at present going to waste downstream, an end to the water deficit in the lower reaches of the Sha'bān canal, and a subsequent extension and intensification of irrigation in the study area. During years of short supply more rigid control would ensure the maximum utilisation and fair

1. See Chapter 6.2.

distribution of all available waters. Disputes would be handled by the Irrigation Institute and enforced by law. Since the people who would benefit most would be the orchard owners of the city, the cost of water would be proportionately more for them - 800 riāls per hectare, compared with 400 riāls per hectare elsewhere along the Sha'bān canal and 150 riāls per hectare on other canals.

In summer 1963 another team from Tehrān, led by W. Lawley, completed a further investigation of the Nahāvand irrigation system[1]. Its report gave little evidence of improvements having been made in the intervening three years and re-emphasized the main problems, particularly the weakness of the local irrigation authority. Lawley accepted in full Rejali's proposed modifications and added several possible methods of implementing them, but warned against the dangers of too rapid change. Rather he recognised that irrigation was very traditional and change must come slowly and be accompanied by proper education of the people and technical assistance to ensure its acceptance and therefore its success. He thought that the farmers in the upper areas might strongly resent modifications if made too drastically. By a gradual reduction of the excess amounts of water at present used, however, the farmers could be given time to acquire improved habits of water useage. On the other hand, a large proportion of farmers along the Sha'bān canal who had suffered from short supplies in the past would no doubt be only too willing to accept any new system which would give them more water. Finally, Lawley suggested the formation of a water user's co-operative to aid the participation and therefore the responsibility of all those involved.

However, during the sixties the proposals of neither Rejali nor Lawley were acted upon. Attention was focussed rather on the implementation of the land reform laws, although further years of

1. Lawley, W. (1963).

water shortage, such as 1964, again emphasized the weakness of the reticulation system.

4.1.2. THE PRESENT IRRIGATION SYSTEM

Following the nationalization of water on 29th July 1968 and the establishment of the Ministry of Water and Power, a separate Department of Irrigation[1] was set up in Nahāvand city in 1969 to take over full responsibility for the control and distribution of water in the districts of Nahāvand and Tuserkān. The need for a strong, independent body to deal with the conflicting and complex demands of the irrigation system, stressed by both Rejali and Lawley in Olyā, had at last been acted upon.

During the period 1969-1974 much progress has been achieved in realising their proposals. The power of the landlords to usurp water for their own ends, already reduced when they lost their land together with its attached water rights at land reform, was curtailed. The traditional take-off of water was replaced by a formal system of water rotation on a time basis. For each canal water was allocated according to its needs and the villages along it received water at set times (see Table 23). On the Sha'bān canal, for example, water was divided between the villages and the city in

1. In spring 1974 it was announced that the Western Development Authority (Sherkat-e Omrān-e Gharb) was in the process of formation, with its headquarters in Sanandaj. The Irrigation Department is to be transferred to this authority from the Ministry of Water and Power (now the Ministry of Energy) and irrigation will again become the responsibility of the Ministry of Agriculture.

Table 23 The present system of water division

Village	Irrigation canal(s)	Cost of water	Water division
Gol-e Zard, Razīābād	Sha'bān	2000 riāls/joft	3-5pm (plus water at night & on Fridays)
	Gol-e Zard	2000 riāls/joft	
Kuhāni	Sha'bān	450 riāls/ha.	11am-3pm (plus any time there is water)
	Āsiāb	350 riāls/ha.	
Bābā Rostam	Sha'bān	2000 riāls/joft	2.30-5.30pm
	Fiāzemān	1250 riāls/joft	3 days & nights per week
Jahānābād	Sha'bān	2000 riāls/joft	6-10am (¼ of water) 10-11am (all water)
Fiāzemān	Fiāzemān	1250 riāls/joft	3 days and nights per week
Sha'bān	Sha'bān, Pusht-e Jub	250 riāls/ha.	6-10am (½ of water)
	Sha'bān, Zir-e Jub	200 riāls/ha.	
Qal'eh-e Qobād	Sha'bān	900 riāls/joft	6-10am (¼ of water)
	3 canals from Kharchang Rud	1000 riāls/joft	3 days and nights per week
Beyān	Upper Beyān (Sang-e Sorākh)	1250 riāls/joft	Afternoons only
	Lower Beyān	1250 riāls/joft	Half the supply (half for Tokeh)
Bābā Qāsem	Bābā Qāsem	1250 riāls/joft	3½ days per week
	Kharchang Rud canals		2 joft from Salarabad; 2 from Ja'farabad
Milāb	Kharchang Rud canals	1000 riāls/joft	6 hours per 12 days per farmer
Nahāvand city	Sha'bān	1000 riāls/ha.	6pm-6am and all day Friday
	Gol-e Zard		

Source: Fieldwork, 1973-74

the following manner:

Qal'eh-e Qobād – 6-10am daily (¼ of water)

Sha'bān – 6-10am daily (½ of water)

Jahānābād – 6-10am daily (¼ of water)

– 10-11am daily (all of water)

Kuhāni – 11am-3pm daily (all of water)

Raziābād and Gol-e Zard – 3-5pm[1] daily (all of water)

Nahāvand city – 6pm-6am daily (all of water)

– all day and night on Friday[2]

Note: 1. The hour between 5-6pm was purposely not allocated, thereby giving flexibility to the system to allow for variations in daily requirements.

2. All the village outlets were kept closed on Fridays and only the city received water.

Wastage of water by leakage and mishandling has also been steadily reduced since 1971 by the establishment of proper diversion gates, lined with cement, at points of off-take and by repairs to canals.

Administration of the reticulation system was originally handled directly by the head of the Irrigation Department, but since 1974 he has employed a villager from Kuhāni to supervise the control of the system on his behalf. The department also employs a number of village officials to regulate the off-takes along the canals (mirāb), to ensure that the villages receive their share of the canals' water, and to collect water dues. Lastly, the village official in charge of irrigation, or the individual farmer or labourer, distributes water to wherever it is needed. Work on the upkeep of canals, carried out before land reform by the landowners by corvées, is now shared among the villages, except for the Sha'bān canal where responsibility remains with the Irrigation

Department[1]. All users of water from the canals are charged according to the area of land under irrigation held by them and the length of the canal serving it. Thus the city landowners at the end of the Sha'bān canal pay more than the villagers of Sha'bān or Jahānābād (see Table 23). Payment is collected twice a year either by joft or by hectare, according to custom and ease of calculation. Where irrigation is based solely on water from other sources, notably springs and qanāts, for example at Torkān Torkān, close to Milāb village, and to the north of the main road at Sha'bān, control of the water is left completely in the hands of the farmers and no charge is made.

Although bureaucratic control of irrigation in Olyā would appear much greater than is usual in Irān, in practice it is not too tightly managed because there is generally a surplus of water available for division. The success of the system may be judged by the few complaints raised, although some villagers still dislike having to pay for water which they consider to be theirs by right. However, the concensus of opinion is that the cost of water is reasonable and is more than compensated for by the reliability of supply now assured. Perhaps, too, the system has been readily accepted because the actual distribution of water to the land is still in the hands of village people and the use of arbitrary power is minimal. In any case, disputes may be brought directly to the head of the Irrigation Department and receive (and be seen to receive) prompt and fair attention. Particularly during the late summer months, when crops require a great deal of water and there is

1. The department cuts off the water to the Sha'bān canal annually in mid-April for about ten days and employs teams of workers to dig outthe mud from its bed and carry out repairs.

a strain on the canals' capacity, the gendarmerie is often called in to ensure the department's rules and decisions are accepted. In the past the misappropriation of water was a common complaint but now is a rare occurrence in Olyā and carries a 1000 riāl minimum fine.

The reticulation system has been successful so far largely because, as mentioned above, the Āb-e Nahāvand and to a lesser extent the Kharchang Rud have provided an ample and reliable source of water. In turn this has encouraged a steady intensification of land use and a reduction in the area under fallow. Now, however, some concern is being expressed over the pressure on water supply in the late summer months and how far intensification can continue without a serious water shortage developing. Another closely connected problem arises from the demands for a fair share of the Gāmāsiāb water by farmers below Nahāvand city, who are the first to feel threatened by any reduction in water supplies. Although measurements of river flow are few and of dubious reliability, frequent observations of the river in the summer months of 1973 and 1974 during fieldwork would suggest that there is still considerable water available for irrigation and that much water still runs to waste from the reticulation system. To avoid undue stress being put on the system in the future stricter measurement and a fuller understanding by the Irrigation Department of total water availability will be required and an overall tighter control of reticulation to match conflicting local interests; but more important still it will require a much improved knowledge of crop requirements and an increased efficiency of water use by the farm population than is at present the case. So far there does not seem to have been a recognition by the villagers of water as the prime basic resource of the valley nor of the need for full

co-operation between the Irrigation Department and the cultivators in its conservation and for its optimum use. This is essential if agriculture is not again to be held back by water constraints.

4.1.3. THE UNIRRIGATED (DEIMI) AREA[1]

Much of the land of the villages under study cannot be irrigated, as it lies too far above the level of the river for water to be commanded by *jubs*. It is true that a number of springs do permit small areas of dry land to be irrigated, or at least semi-irrigated, for example at Torkān Torkān, Jahānābād and Sha'bān (see Figure 14), which are well above the reach of the Sha'bān canal, but on the whole the canals mark a clear inner zone of irrigated, highly productive land and a perimeter of poorly productive dry land, dependent only on an unreliable rainfall. The *deimi* area has other disadvantages for cultivation: it is topographically hilly or steeply sloping and either very stony or stripped of its thin cover of soil by erosion consequent upon over-grazing or bad ploughing practices.

All the village *nasaq*-holders with irrigated land have commensurate rights to cultivate the *deimi* land and, despite its unfavourable conditions, it is cultivated quite extensively with grains or pulses. These require little work and in a good year, with adequate rainfall in the spring and summer months, provide an additional boost to production[2]. The yield of wheat may reach one

1. The total area of dry land belonging to the villages is not known, but the villagers said that it exceeded the irrigated area. Only Fīazemān has no *deimi* land.
2. One-third of the farmers sampled had *deimi* crops in 1973 and others had ploughed their land ready for future cropping (see Table 24).

Table 24 Land under deimi crops in the farm sample

Village	Farmer	Total area (ha.)		No. of pieces		Crops	
		1973	1974	1973	1974	1973	1974
Raziabad	1.	-	0.6	-	1		W.
Kuhani	4.	0.3	0.6	1	1	W.	W.,P.
	8.	-	1	-	1		W.
	11.	6	7	10	12	W.,B.	W.,B.,P.
Jahanabad	12.	1	1	1	1	P.	P.
	13.	0.8	2	1	2	P.	P.
	14.	0.5	0.5	2	2	W.,P.	P.
	15.	-	2.5	-	2		P.
Sha'ban	26.	-	1.2	-	2		P.
	28.	2.5	3.5	2	3	W.	W.
	30.	-	0.4	-	1		P.
Beyan	38.	2	-	4	-	W.	
	39.	1	0.2	1	1	W.	W.
	40.	0.5	-	2	-	W.	
	41.	0.1	0.3	1	1	W.	W.
	42.	0.4	-	1	-	W.	
	43.	0.2	-	1	-	W.	
Baba Qasem	44.	0.5	-	3	-	B.	
	46.	0.8	1.5	3	2	W.	W.,B.
	47.	0.3	0.6	1	1	W.	B.
	48.	0.8	2	1	2	W.	W.,B.
Milab	50.	0.5	2.1	2	3	P.	W.,P.
	51.	1.8	1.9	2	3	W.,P.	W.,P.
Total		20.0	28.9				

Note: W. - Wheat B. - Barley P. - Pulses

Source: Fieldwork, questionnaire survey, 1973-74

ton per hectare. Deimi crops are, however, very speculative and, in a bad year, as was 1974,the harvest may not even cover the seed used. Farmers generally cultivate their dry land at most in alternate years. "Landless" villagers have no rights to cultivate deimi land but both classes have the right to graze their animals on all land not being cultivated.

4.2. CHANGES IN LAND USE[1]

Note: In this section, except where noted, land use refers to irrigated land.

4.2.1. THE GENERAL PATTERN OF LAND USE IN 1960 IN THE MAIN VALLEY[2]

Land use in the main valley of Olyā in 1960 was largely based on two crops: wheat, planted in autumn, and beans[3], planted in spring. This was true both for the large landed proprietor villages, such as Beyān and Raziābād, and for the peasant proprietor villages, such as Kuhāni and Sha'bān. The third most important crop was clover. A large range of other crops was also grown, including barley, vegetables, sugar beet, alfalfa, cucurbits, cotton, tobacco, sunflowers, grapes, fruit trees and poplars (tabrizi), but on a much smaller scale. In addition, about 25% of the total area, particularly at the extremities of the main canals, was left fallow each year. But fallowing did not imply a purposeful resting of the soil; the limiting factor on land use in 1960 for many cultivators

1. See Appendix 1 for an explanation of data collection.
2. Information for this section is largely drawn from two F.A.O - Irrigation Institute reports: Rejali, M.A., et al. "The Nahāvand irrigation scheme: present and proposed", (1960), and Samadi, M., et al. "Nahāvand semi-detailed soil survey", (1959)
3. In this chapter, except where noted, "beans" are used as a convenient collective word for the large range of pulses grown. Of these, white beans (lubiā-ye sefid) and red beans (lubiā-ye germez) were most important in terms of area planted, but pink beans (lubiā-ye soratti), chick-peas (nokhod), māshak, lubiā-ye chitti, lubiā-ye polo and lubiā-ye cheshm-e bolboli were also grown.

was, as mentioned in the previous section, the amount of water available. In general, a crop rotation of beans and wheat was practised, interspersed by a fallow year or an alternative summer crop.

The exact total area under different crops for each village is not known, but Rejali did record land use areas under the main canals in five categories (see Table 25 and Figure 16):

a. Wheat - About 1,650 Ha., with yields averaging 1,200 - 1,500 kilos per hectare.

b. Beans - About 690 Ha., yielding 1,500 - 1,800 kilos per hectare.

c. Clover - About 130 Ha.

d. Fallow - About 860 Ha.

e. Garden-cum-orchard - About 680 Ha., but concentrated in the Nahāvand city area and to a lesser extent along the Sha'bān canal between Jahānābād and Gol-e Zard. The main trees were apricot, walnut, quince and apple. There were also a considerable number of small vineyards scattered throughout the valley. Poplar trees were included in this category, and were found in patches mainly along the banks of the Āb-e Nahāvand river and Sha'bān canal.

Yields were on the whole high in the main valley of Olyā compared with the largely unirrigated surrounding mountains and indeed with Irān as a whole (see Table 28). Not surprisingly, the reports of Samadi and Sir Alexander Gibb and Partners (1958) recorded the relative verdancy of the villages.

The most significant change in land use during the fifties was noted by Rejali as being the increasing area under beans, which had replaced opium as the major cash crop in Olyā since the

Table 25 Land use under the main canals, 1960[1] (ha.)

Irrigation canals	Wheat	Beans	Clover	Fallow	Garden[2]	Total area	3	4
Upper Beyān	110	45	5	95	8	263	168	58
Lower Beyān	219	74	12	132	10	447	315	96
Bābā Qāsem	216	144	35	35	26	456	421	205
Fiāzemān	315	57	10	247	31	660	413	98
Sha'bān	672	282	50	340	582	1926	1586	914
From Kharchang Rud	114	85	15	14	21	249	235	121
Total	1646	687	127	863	678	4001	3138	1492

Note: 1. Rejali's data was found to be of rather doubtful accuracy during fieldwork. It also does not cover the exact area under the present study. The data corresponds to Figure 16.

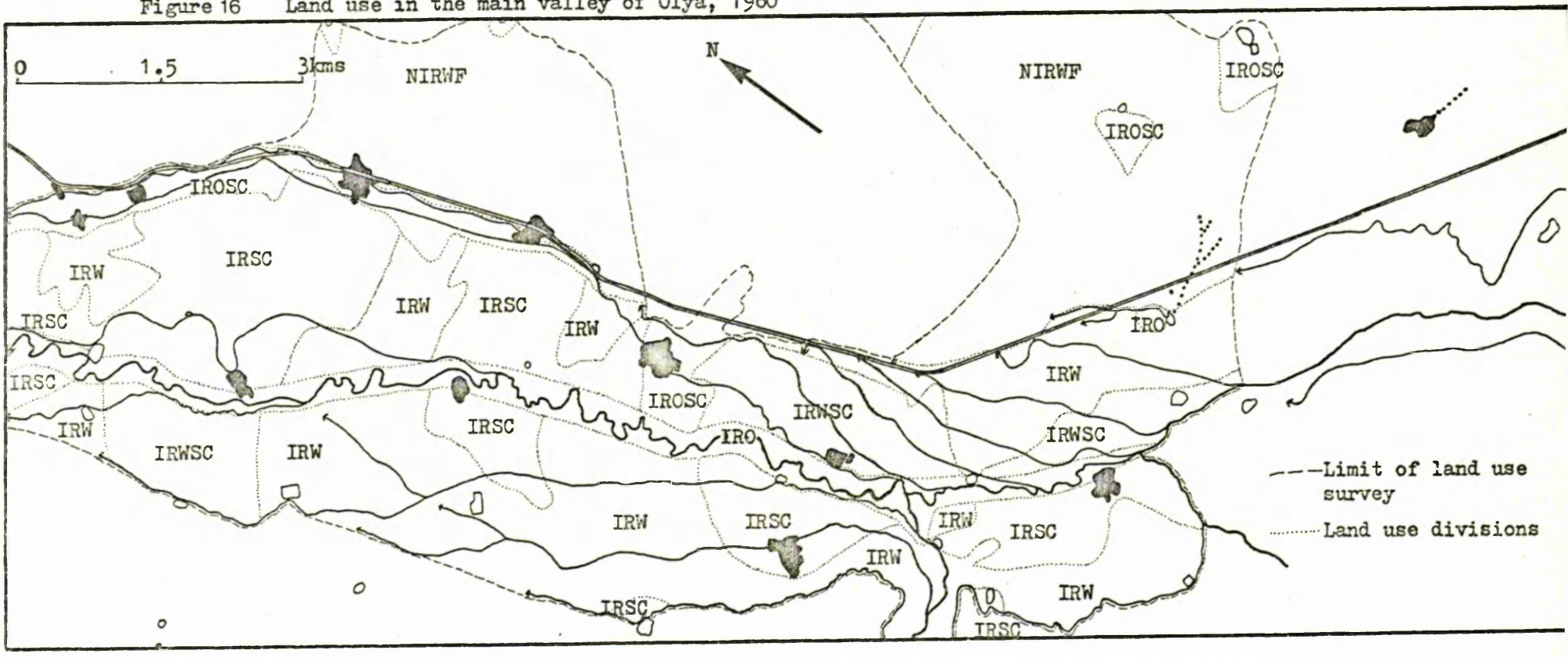
2. Includes fruit trees, poplars and grapes grown under garden conditions. Of the total, over 500 ha. were located outside the study area below Nahāvand city.

3. Area under irrigation in June, including wheat.

4. Area under irrigation in July-August, excluding wheat.

Source: Information drawn from Rejali, (1960)

Figure 16 Land use in the main valley of Olyā, 1960



Source: Samadi, M. (1959)
Rejali, M.A. (1960)

Key: NIRWF - Non-irrigated wheat and fallow land
IRW - Irrigated wheat
IRSC - Irrigated summer crop, mainly beans
IRWSC - Irrigated wheat and summer crop
IROSC - Irrigated orchards and summer crop
IRO - Irrigated woodland and orchards

prohibition in Irān of opium cutivation in 1955[1]. In this role beans were proving more successful than other crops for not only were they well suited tothe climate and soil of the valley and to rotation with wheat, but they also had a high market value. This latter point was particularly important, for opium, although widely abused as a drug, had previously been the major source of income of the valley. Beans also were a labour intensive crop, requiring regular weeding and frequent irrigation, and provided much needed employment in the densely populated villages. Landowners in turn encouraged their cultivation, taking one-third of the crop as their share (see Chapter 3.1.). However, the extension of the cultivated area under beans, with the consequent increase in water demands in the period of shortest supplies in late summer, helped to precipitate the previously mentioned water shortage crisis of 1960.

The village land area in both landlord and peasant proprietor villages was typically divided into a number of crop zones, much like the English open-field system, each planted with one crop. In each zone the cultivators had their individual plots of land but field operations were co-ordinated and thus access to land facilitated without damage to crops. There was therefore no need for tracks to individual fields. Transport was in any case by foot or donkey and could follow the balks or irrigation ditches separating fields. The decision as to the crop grown was made either by the landlord or in the peasant proprietor villages by common agreement founded on tradition. Thus the introduction of new crops or a different rotation was not encouraged; likewise, crop diseases and pests spread rapidly across contiguous plots of the same crop.

1. See Tienstra, T.J., and Strandkjaer, N. "Report to the government of Irān on opium poppy replacement (Ostān 11)", (1958)

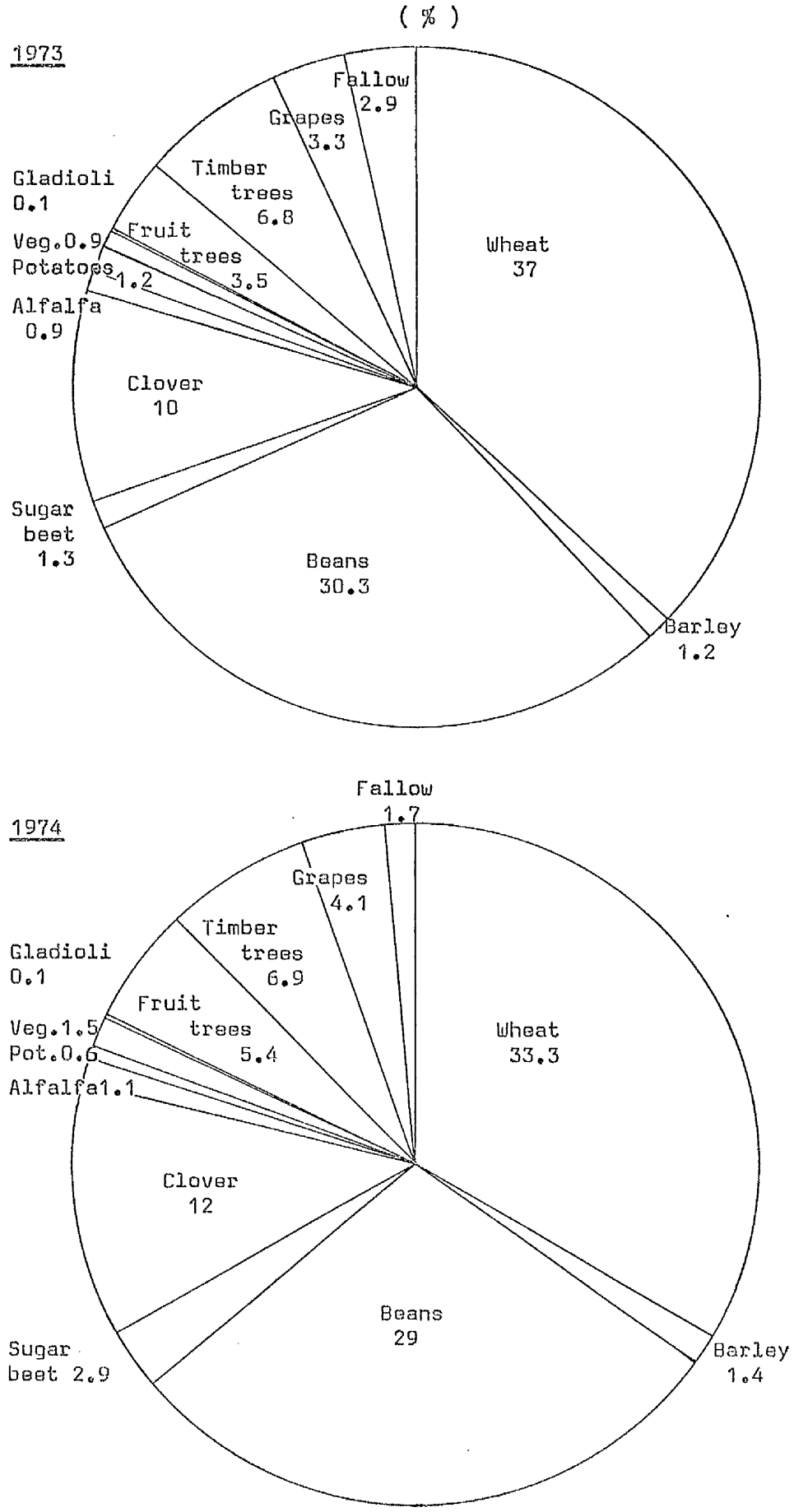
4.2.2. CHANGES IN LAND USE ON SMALL-HOLDER FARMS, 1960-1974

Land use in 1973 in the eleven villages under study rested largely, as in 1960, on wheat[1] and beans. Together they accounted for about two-thirds of the cultivated area. From the questionnaire survey of the small-holders it was found that wheat was still the major crop, occupying 37% of the land, but that beans had increased to the point that they were rivalling wheat in terms of acreage with 30% of the land area. This has been represented on the series of maps of the eleven villages included in Figure 17 and in Tables 26 and 27. The increased area under beans was not found to be at the expense of wheat because more land was under cultivation than in 1960 and the fallowed area had been greatly reduced, for the increased availability of water to a wider area of land, especially since 1969, has encouraged its fuller use. The fallowed area by 1973 had almost completely disappeared in the eleven villages; of the farmers in the sample ten had left land fallow but this amounted to only 4.5 hectares (and this fell to 2.8 ha. in 1974). Fallowing was not practised as a deliberate part of the rotation system for, being a densely populated area, the demand on land to produce crops was high.

Although the farmers often stated that the wheat acreage had fallen in recent years as yields had risen, it was not possible to prove this conclusively. Table 27 shows a slight fall in the wheat area for the farmers in the sample between 1973 and 1974, but it will require further surveys to determine if this is a trend or not. On the other hand it is clear that yields of both wheat and

1. The only other winter grain crop grown in Olyā was barley. But yields of barley and its market price were lower than for wheat and it was grown on only a very small area. Of the sample, five farmers planted 1.8 hectares in 1973 (2.2 ha. in 1974).

Table 26 Pie graphs of agricultural land use in the 11 villages



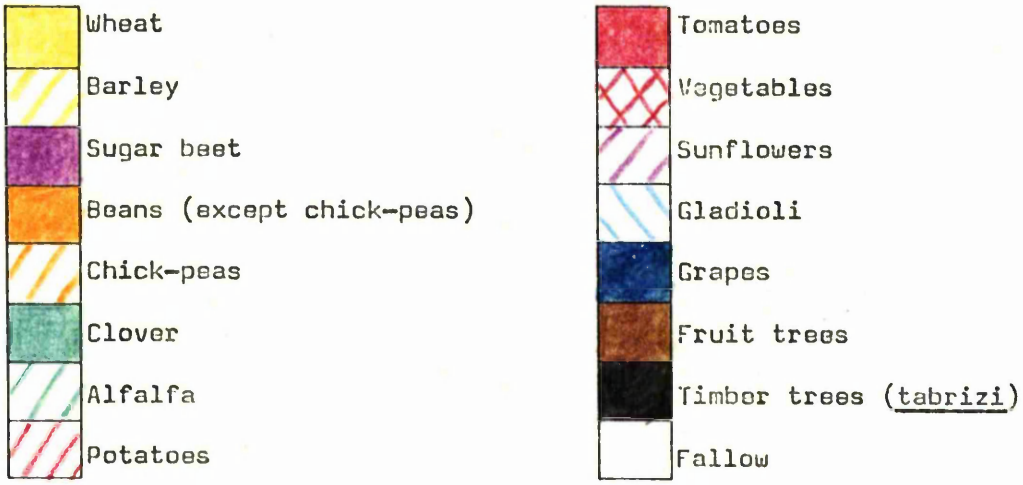
Source: Fieldwork, questionnaire surveys

Plate 5 Land use in the main valley, spring 1973: the wheat is showing green; summer crops are in process of being planted; and the extending pattern of tree crops is clear.

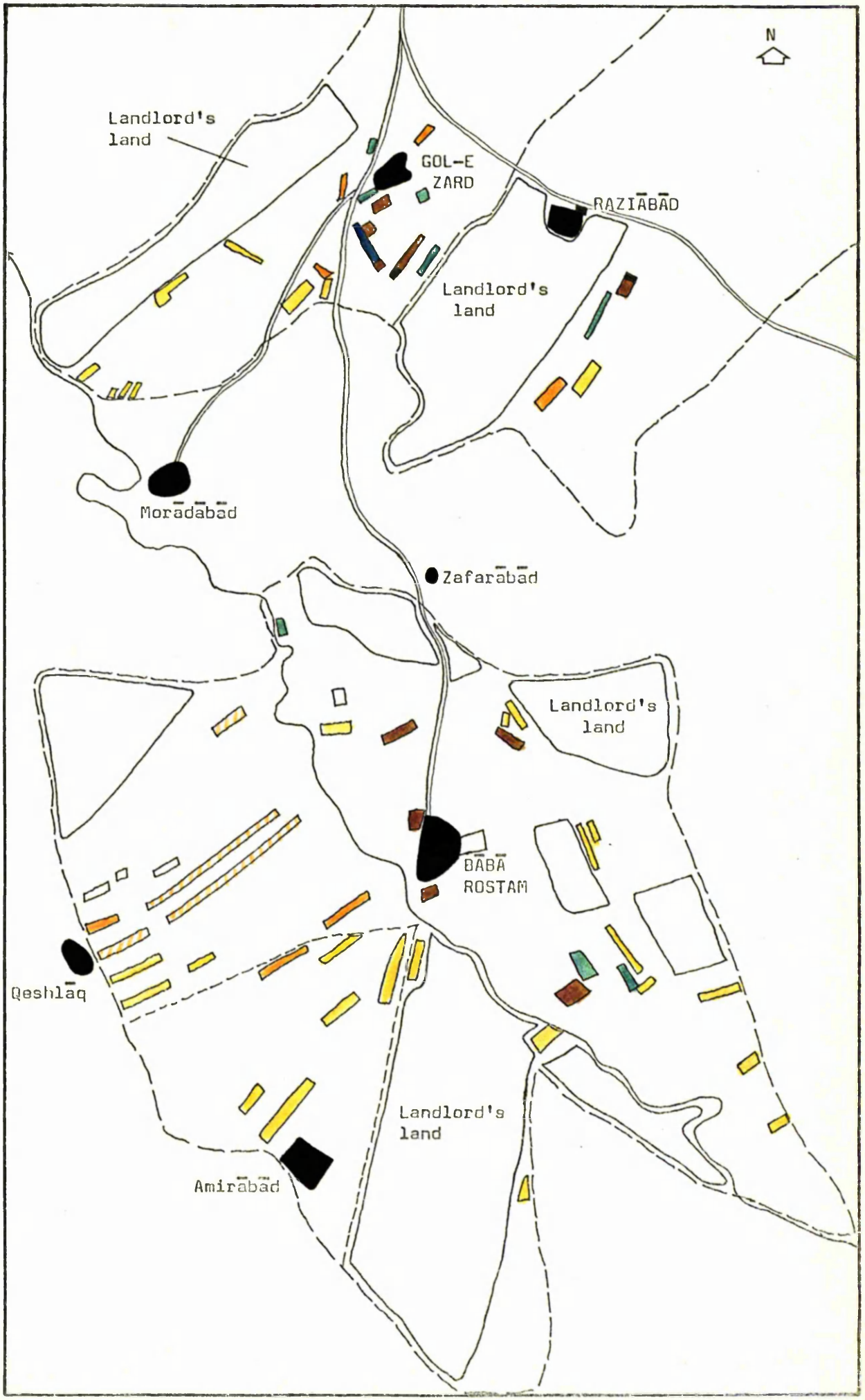
Figure 17 Land use in the 11 villages, 1973

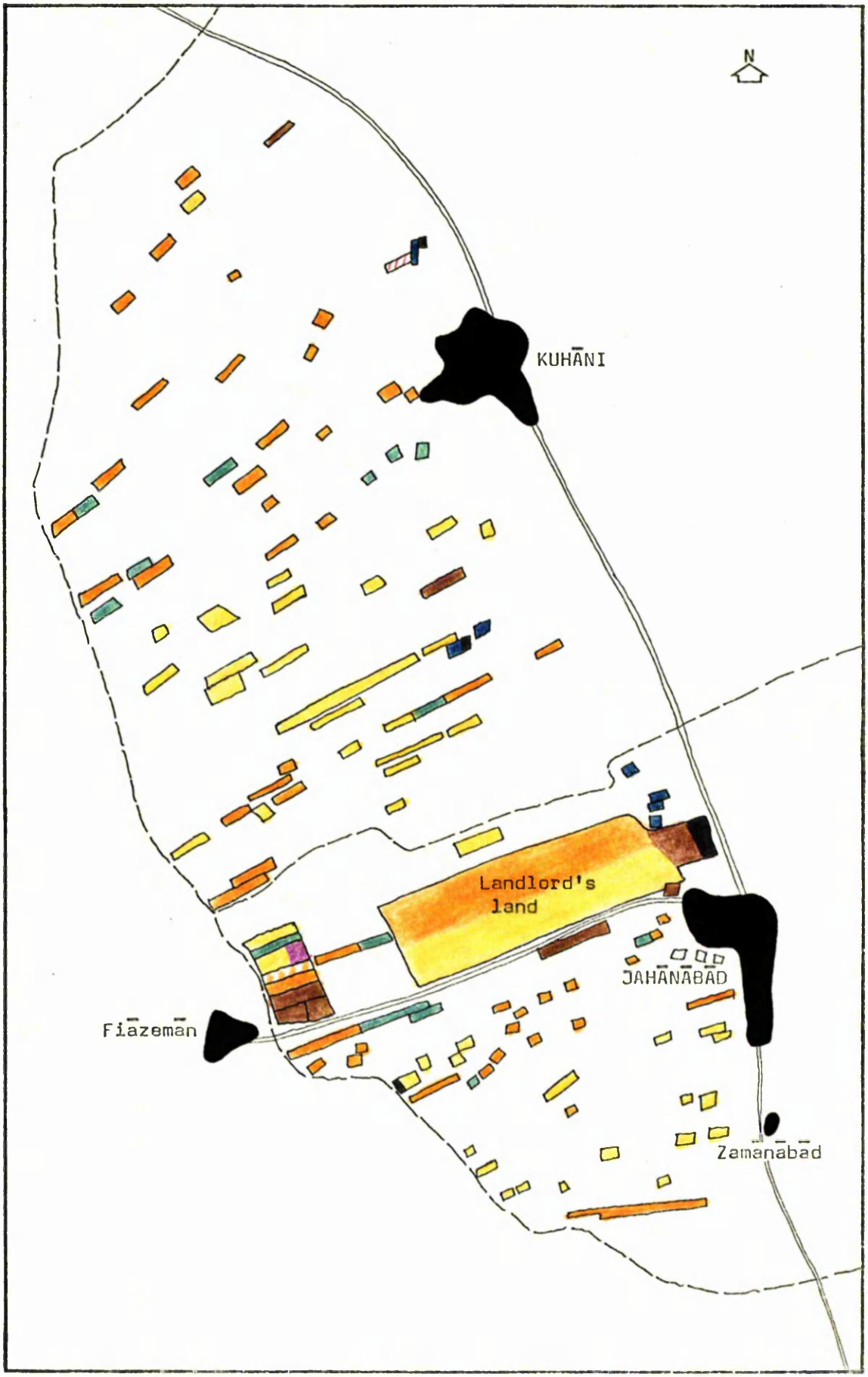
Note: The following maps show the distribution of land use on the 51 farms included in the sample and on the landlords' land.

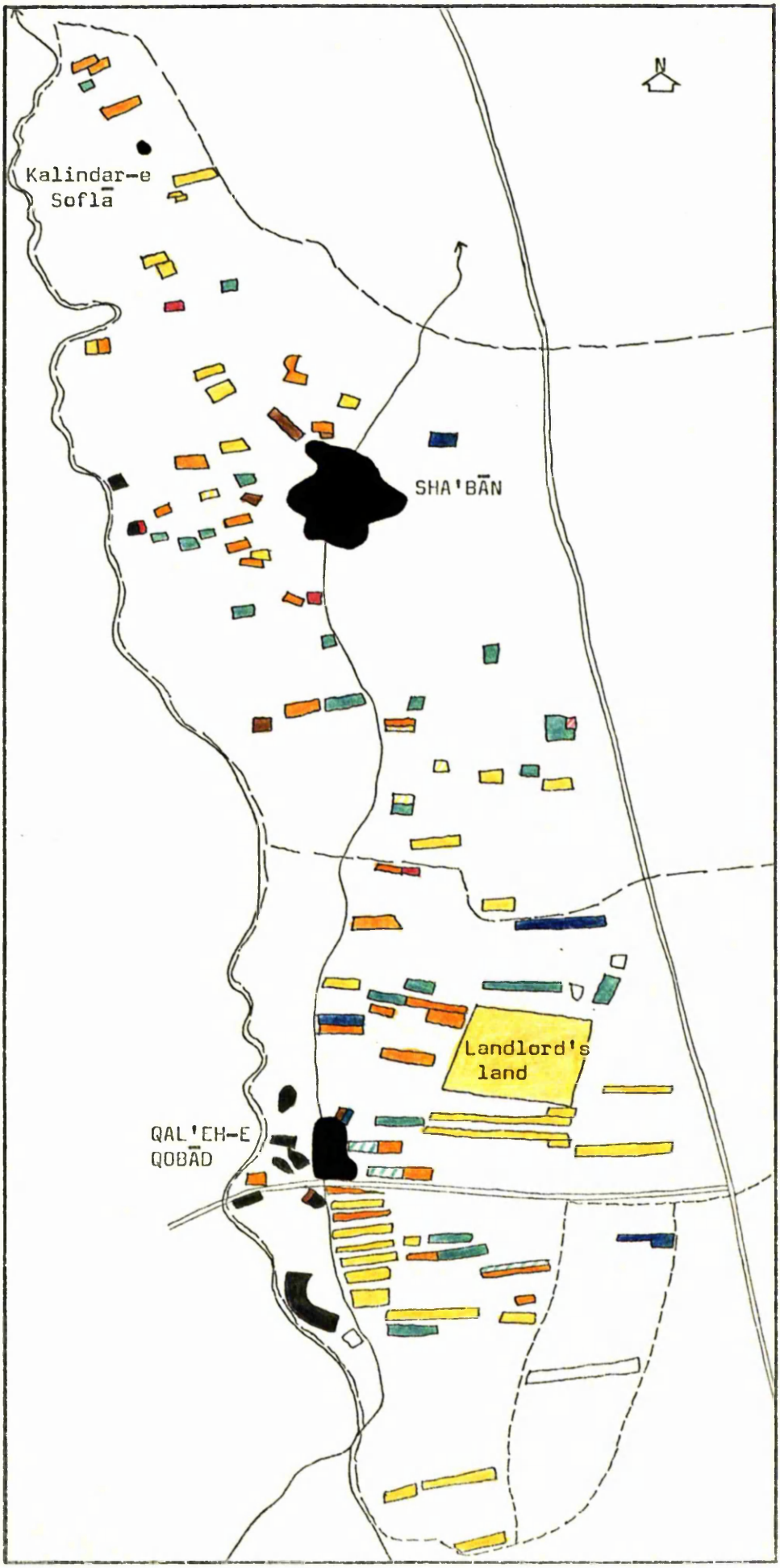
Key:

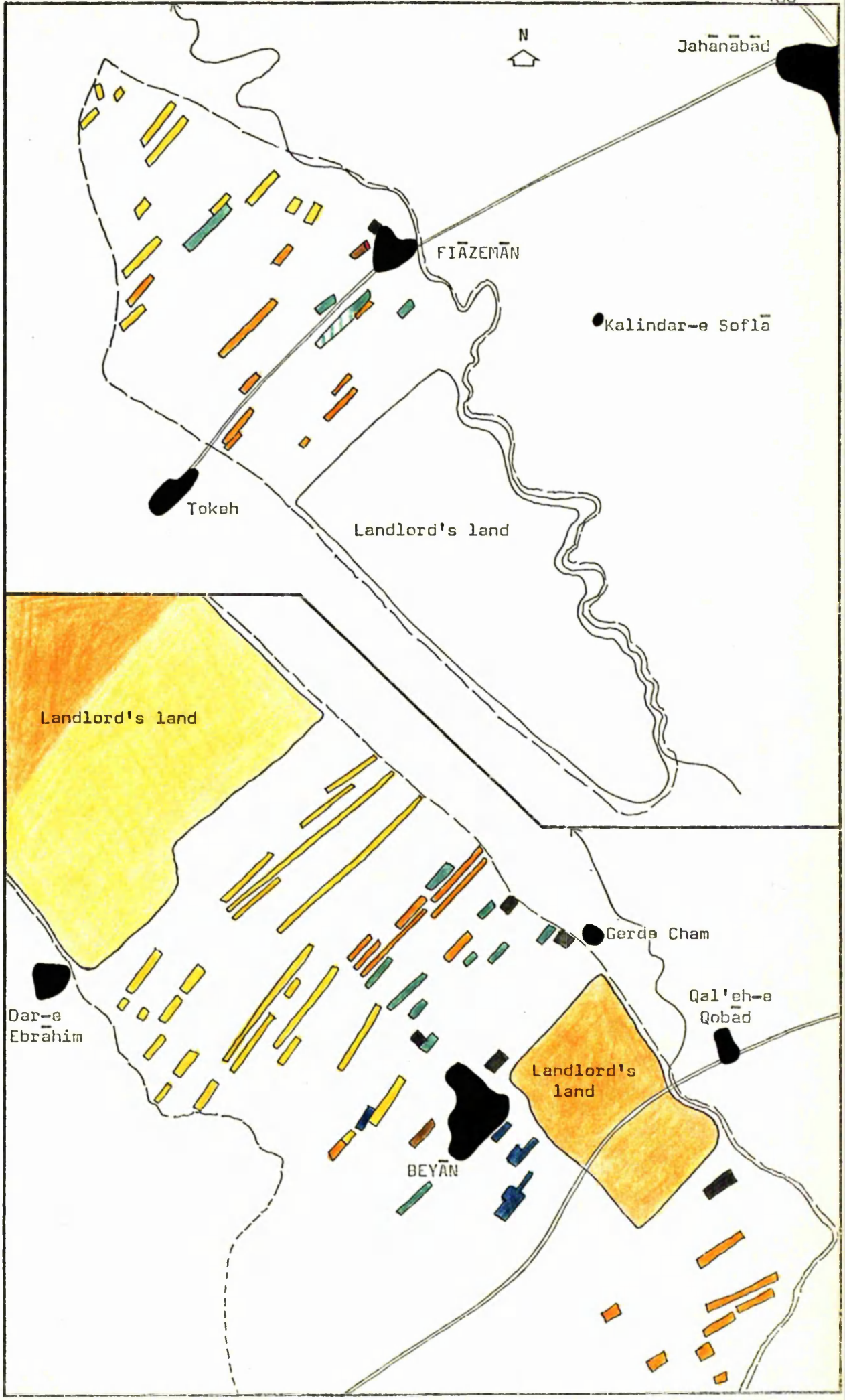


Scale: 1 to 20,000


N
Landlord's land
GOL-E ZARD
RAZIĀBĀD
Landlord's land
Morādābād
Zafarābād
Landlord's land
BĀBĀ ROSTAM
Qeshlāq
Landlord's land
Amirābād


N
KUHĀNI
Landlord's land
JAHĀNĀBĀD
Fīāzemān
Zamanabād


N
Kalindar-e
Sofla
SHA'BĀN
Landlord's
land
QAL'EH-E
QOBĀD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Gerde Cham
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Dar-e Ebrāhim
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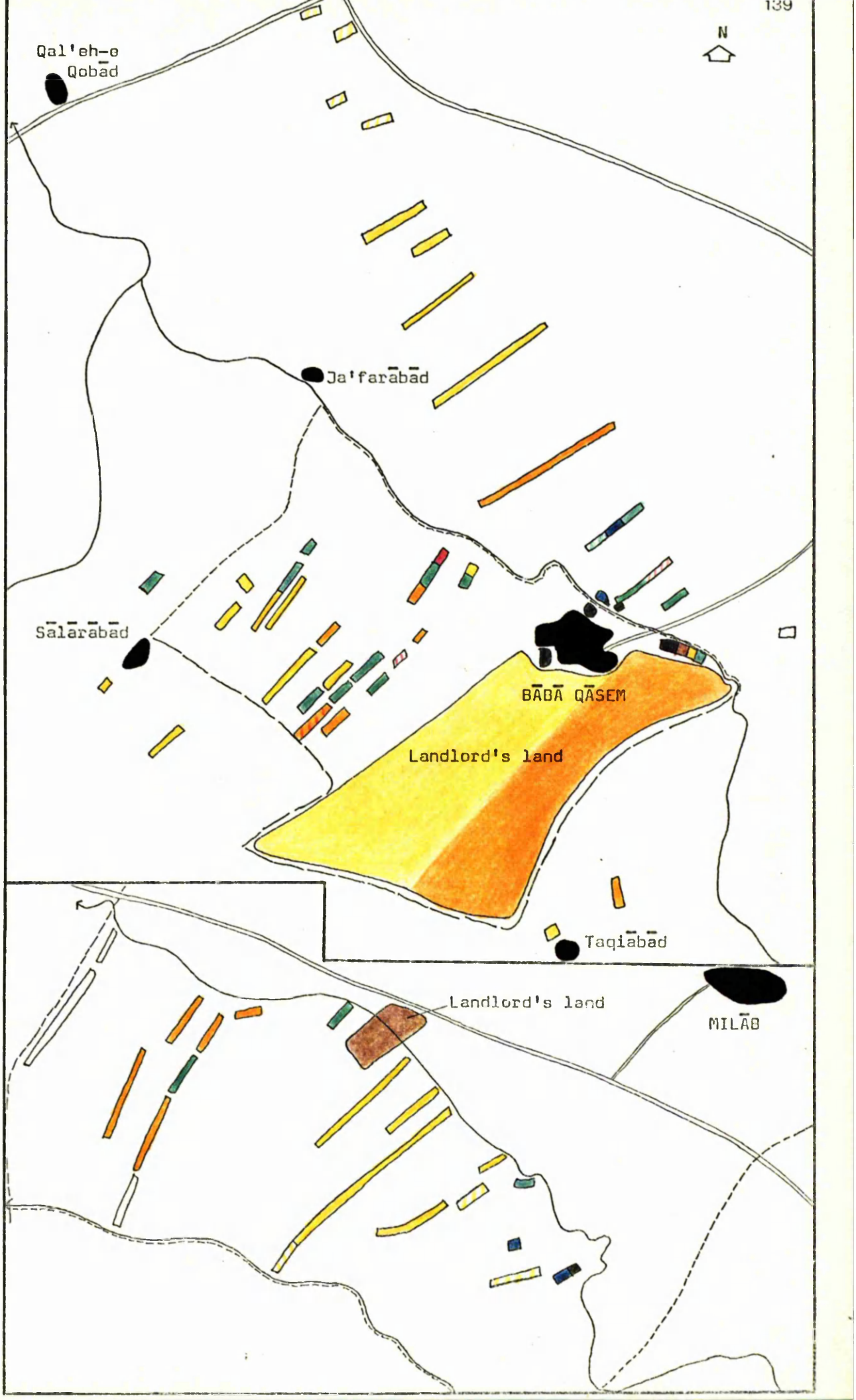
BEYĀN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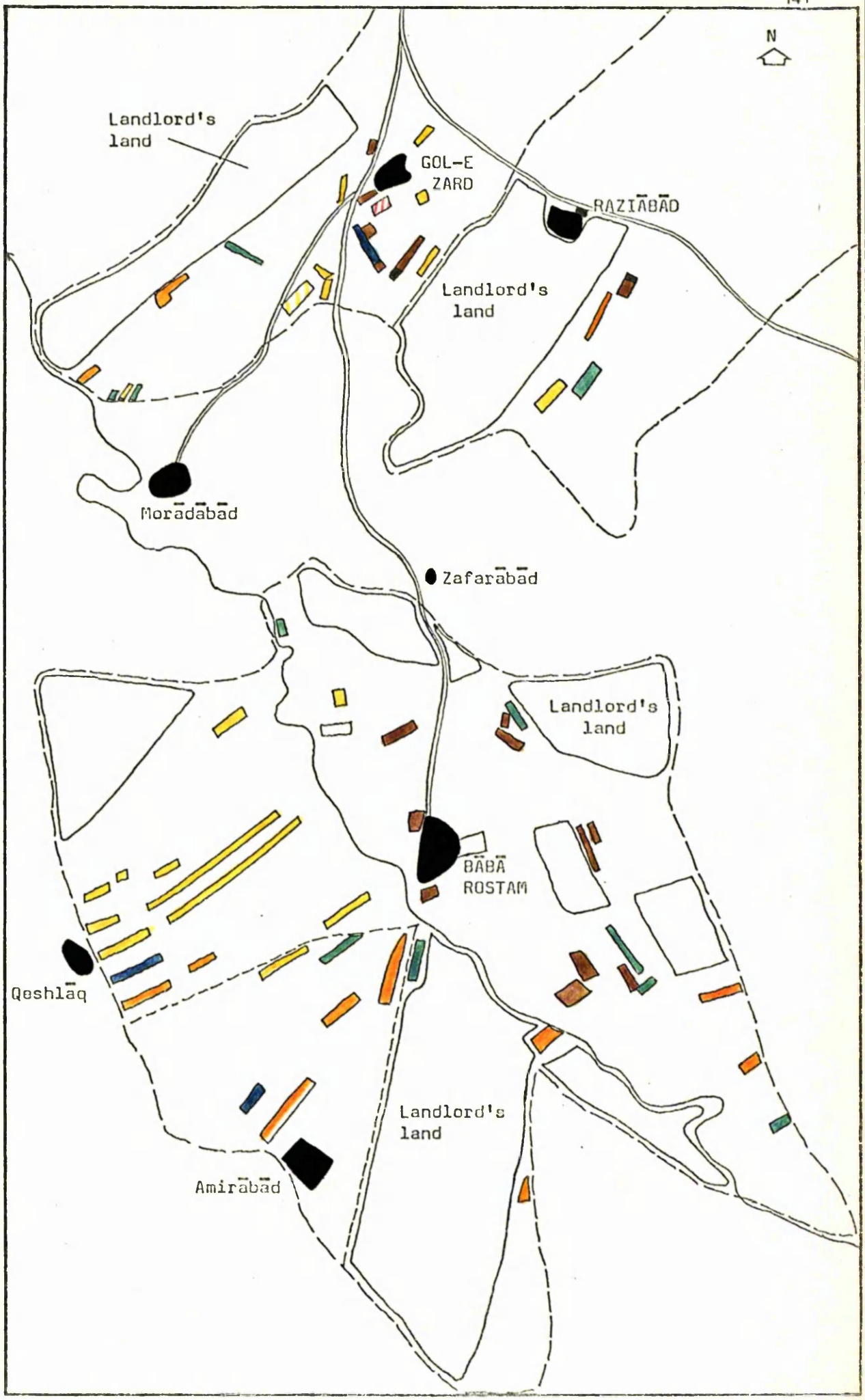
BĀBĀ QĀSEM
Landlord's land
Taqiābād
Landlord's land
MILĀB

Figure 18 Land use in the 11 villages, 1974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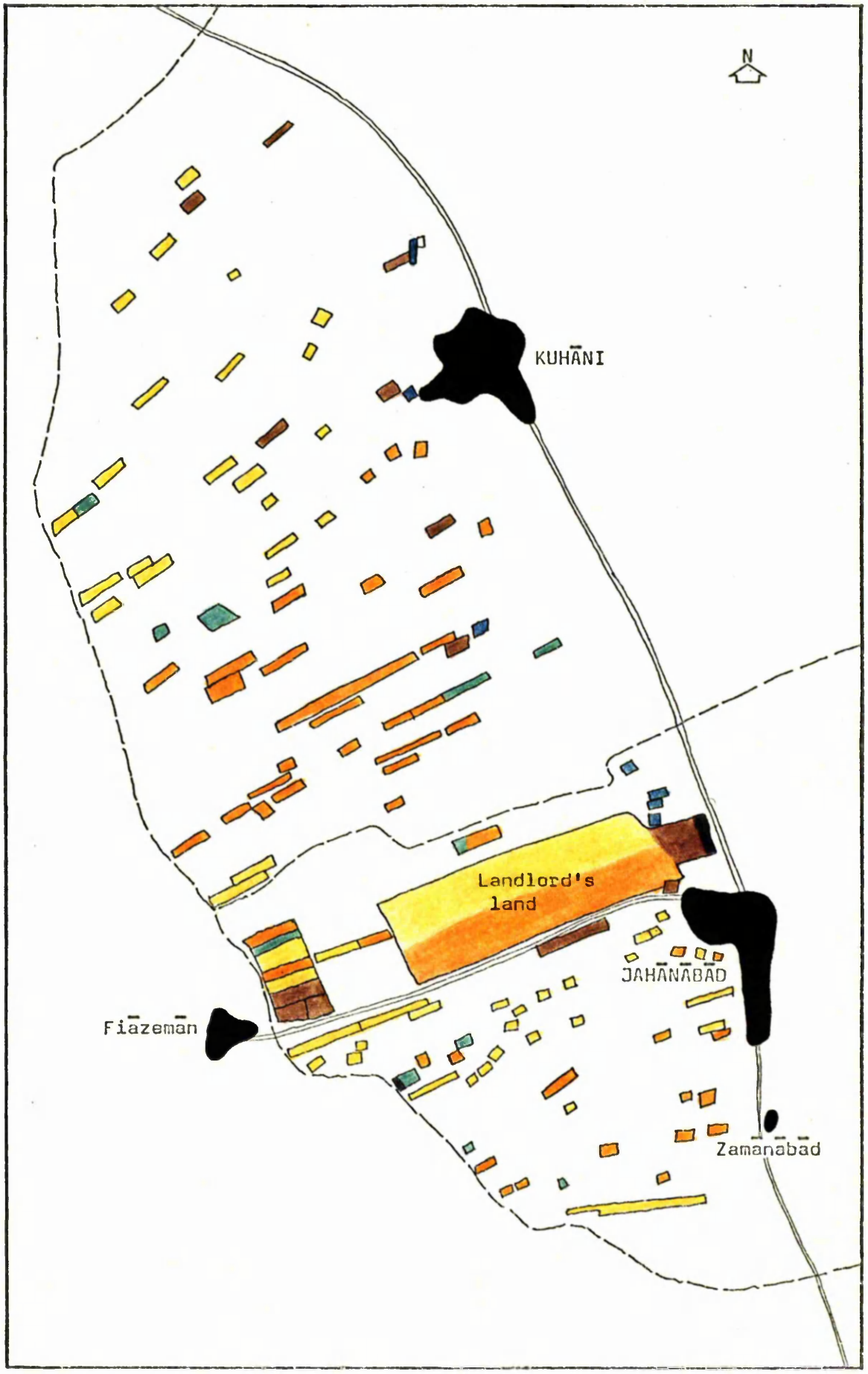
RAZIĀBĀD
Landlord's land
Morādābād
Zafarābād
Landlord's land
BĀBĀ ROSTAM
Qeshlāq
Landlord's land
Amirābād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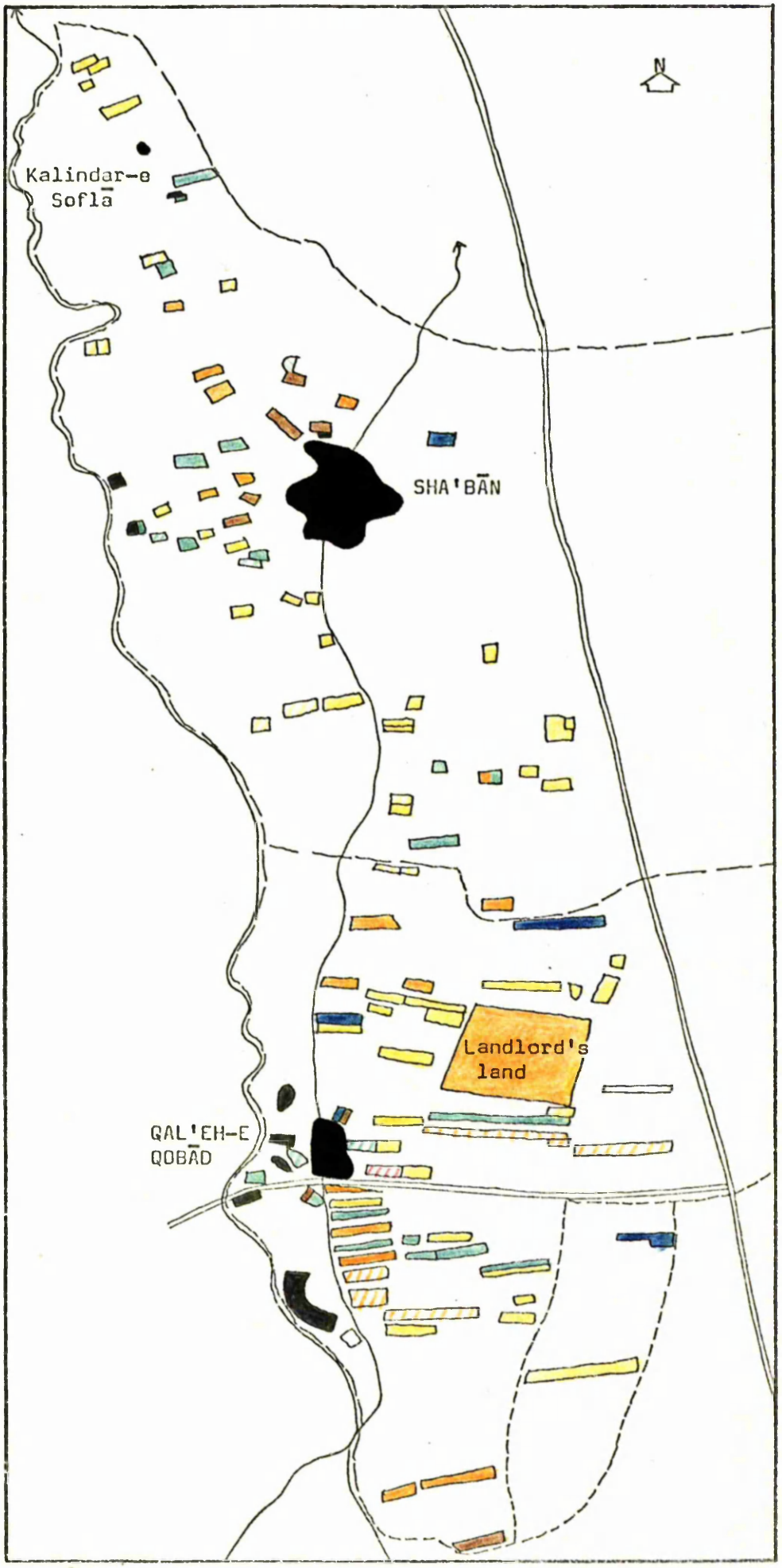
JAHĀNĀBĀD
Fiāzemān
Zamanabad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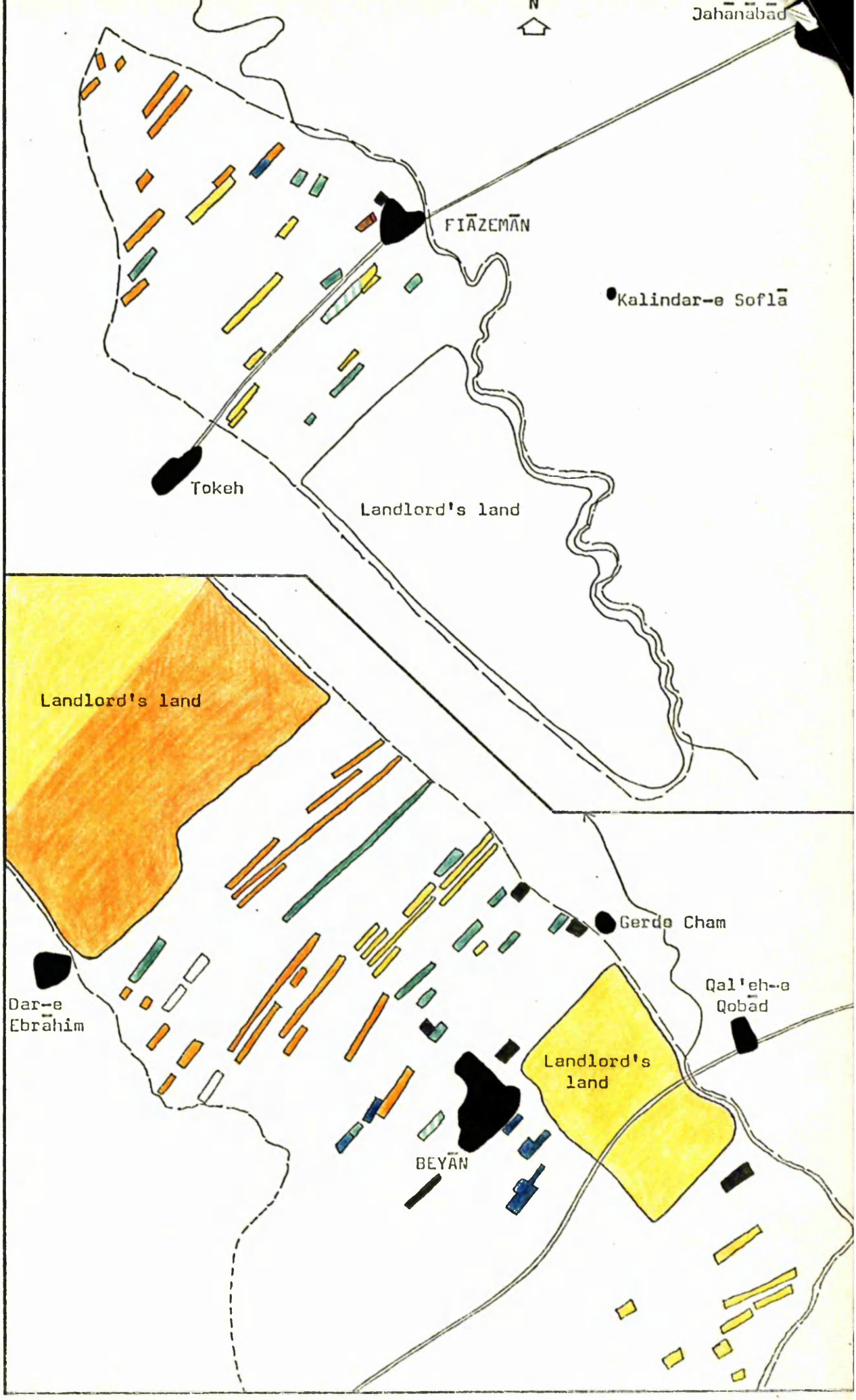
Sofla
SHA'BĀN
Landlord's
land
QAL'EH-E
QOBĀD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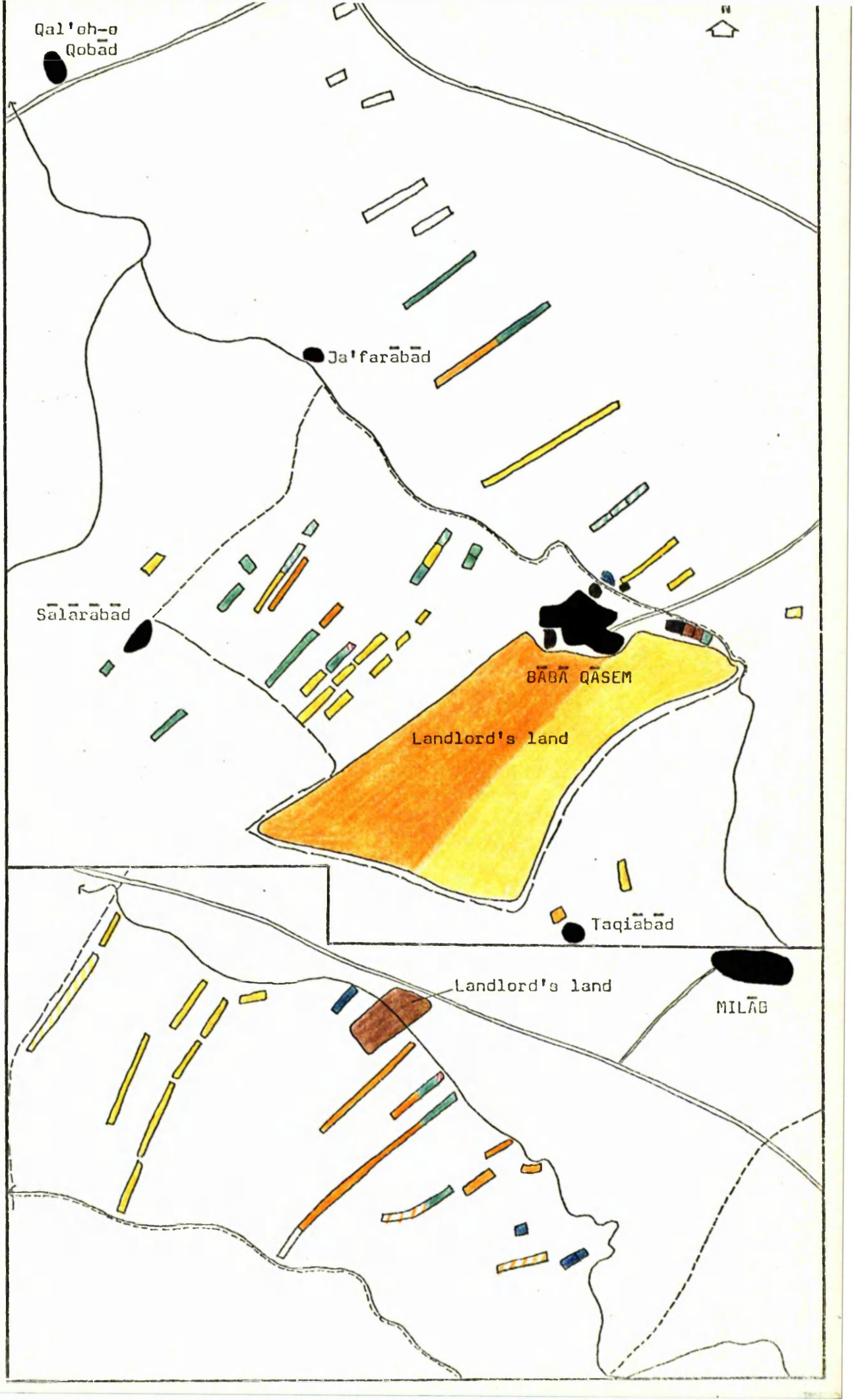
Landlord's land
BEYĀN


Qal'oh-e
Qobād
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Ja'farābād
Sālārābād
BĀBĀ QĀSEM
Landlord's land
Taqiābād
Landlord's land
MILĀB

Table 27 Total sample area of wheat and beans in 1973 and 1974

	1973			1974		
	Ha.	%	No. of farmers	Ha.	%	No. of farmers
Wheat	57.4	37	46	52.3	33	47
Beans	46.9	30	48	45.7	29	46
Total area under cultivation	153.1	100	51	156.9	100	51

Source: Fieldwork, questionnaire surveys

also beans have risen considerably over the past decade. Farmers claimed increases of as much as 300% and questionnaire answers suggested current yields of between 2.0-3.5 tons/ha. for wheat and of 1.5-3.0 tons/ha. for beans. These levels compare very favourably with figures for western Irān and the national average (see Table 28). This can be largely accounted for by the intensity of irrigation of these crops (see section 4.1.), by the use of improved varieties of seed, especially of Hamadān Omid wheat, and by the application of chemical fertiliser (see Chapter 5.2.).

Table 28 A comparison of wheat and bean yields (tons/ha.)

	The study area[1]	Hamadān-Lorestān[2]	Kermānshāhān[3]	Qazvin[4]	National average[5]
Wheat	2.0-3.5	1.2	0.75	1.8-3.4	1.3
Beans	1.5-3.0		2.0	1.6	1.3

Source: 1. Fieldwork, 1973-74

2. Plan Organisation - Battelle Regional Development Project for Region Five, Hamadān and Lorestān, 1972

3. Ministry of Water and Power - Sir Alexander Gibb and Partners, 1966

4. Plan Organisation - Tahal Ltd., 1966

5. Ministry of Agriculture, 1973

In early summer 1974 there were two important market developments connected with wheat and beans. The first was the government announcement that it would substantially reduce its purchases of beans both through the rural co-operative societies and from the free market. The price of beans, which had risen over the sixties, fell sharply, in the case of white beans from about 22 riāls/kilo to about 17 riāls:

	Bean prices (riāls/kilo)	
	1973	1974
White beans	22	17/19
Red beans	25	21/23
Chick-peas	25/30	20/25

The second development was the rise in the free-market price of wheat from about 6-8 riāls/kilo to about 12-16 riāls in response to the introduction of a government guaranteed minimum price of 10 riāls (see Chapter 6.4.). The farmers were generally uncertain about how these changes would affect them, but there seems little doubt that the 1975 crop year will see an increase of the wheat area and the reduction of beans in favour of more profitable summer crops.

At the farm level the area under wheat and beans varied considerably. In 1973 five farmers had no wheat at all, only one had five hectares (and this was in twelve separate parcels), and over half the sample had less than one hectare (see Table 29). Similarly, three farmers had no beans in 1973, only one had over five hectares, and two-thirds had less than one hectare (see Table 30).

The third most important field crop in the study area was clover (see Table 26). The questionnaire showed 43 of the 51 farmers in the sample to have planted it in 1973 (see Table 31) on about 10% of their total land area. Clover was grown by the farmers as the staple feed crop for their animals but was also sold, along

Table 29 Area under wheat by farm size, 1973

Area (ha.)	Farm size (ha. – %)							
	0–1	1.1–2	2.1–3	3.1–4	4.1–5	5.1–10	10.1–15	15.1–16
0–1	7 15%	11 24%	7 15%	2 4%				
1.1–2		1 2%	4 8%	5 11%		1 2%		
2.1–3				1 2%		3 6%		
3.1–4						2 4%	1 2%	
4.1–5								
5.1–6								
6.1–7								1 2%
Total	7	12	11	8		6	1	1

Table 30 Area under beans by farm size, 1973

0–1	9 19%	12 25%	6 12½%	6 12½%		1 2%		
1.1–2			5 10½%	2 4%		2 4%		1 2%
2.1–3						2 4%		
3.1–4						1 2%		
4.1–5								
5.1–6								
6.1–7							1 2%	
Total	9	12	11	8		6	1	1

Table 31 Area under clover by farm size, 1973

0–0.5	9 21%	10 23%	11 25.5%	6 14%		3 7%		
0.6–1						1 2.5%		
1.1–1.5						2 4.5%		
1.6–2								
2.1–2.5								1 2.5%
Total	9	10	11	6		6		1

Source: Fieldwork, questionnaire survey, 1973

Note: 6 – Number of farms
19% – % of total farms sampled

with other forage crops, to neighbouring mountain villages such as Borjak and Oshvand which had numerous sheep and goats but were short of animal feed, and to visiting Lori nomadic herdsmen after particularly arid summers to feed their flocks before their autumn migration south. As an annual crop clover was well liked, for it fitted in conveniently as a rotation crop with wheat and beans and its yield was good, giving at least four cuts during the year and sometimes as many as six. Clover was generally planted after wheat in early autumn and could therefore give one cut before winter set in.

Table 32 Total sample area of other rotational crops in the eleven villages (ha.)

	1973	1974
Barley	1.875	2.2
Sugar beet	2	4.455
Clover	15.585	19.435
Alfalfa	1.34	1.79
Potatoes	1.801	0.065
Gladioli flowers	0.1	0.16
Other (vegetables, cotton, tobacco)	1.457	2.345
Total	24.158	30.45

Source: Fieldwork, questionnaire surveys

Alfalfa was also cultivated as an alternative fodder crop. However, it was of secondary importance to clover because, although of a similar yield, it was a perennial crop and did not fit in with the rotation system. Of the sample only twelve farmers (23%) had planted alfalfa on an area totalling less than 1.5 hectares. Several farmers had, however, recognised its value for cultivation under fruit orchards and, with the encouragement of the Department of Agriculture's alfalfa extension programme, under which first class seed was provided at a subsidised cost, there seems every

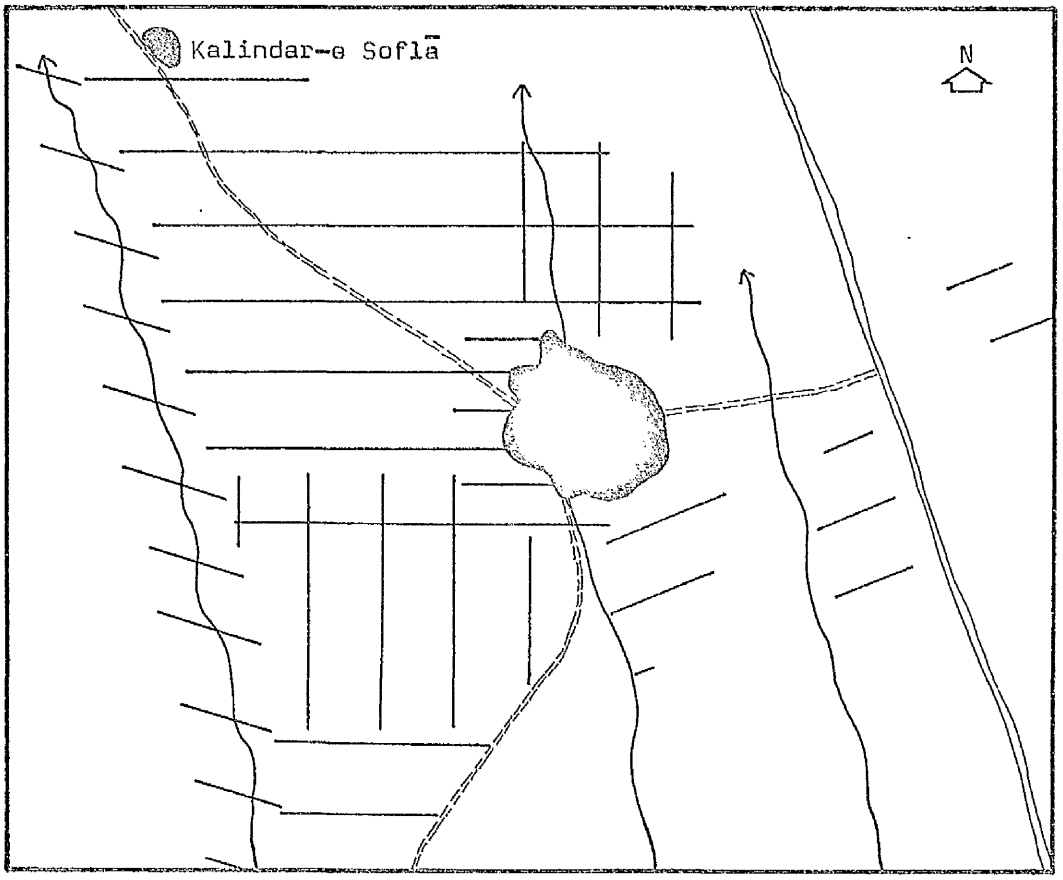
likelihood of its cultivation being extended (see Chapter 5.2.3.).

On the remaining land a wide range of crops was being grown in all the villages. The land use survey identified sixteen field crops and a substantial area of tree crops (see Figure 32). Although most of these crops had a subsistence origin, many of them were being cultivated in 1973 for the local market. As some of these crops were cultivated intensively, the income generated was proportionately higher than their planted areas would suggest. Thus, sugar beet, tomatoes, cucumbers and gladioli could earn more income for some farmers than their larger acreage of wheat or beans (see Chapter 5.3.). In Sha'bān village, for example, where the average holding per family was particularly small - six of the ten farmers sampled had less than one hectare of land - there was particularly intensive cultivation of summer crops in the immediate vicinity of the village (see Figure 19). The land use survey did not show this up well, but did give some impression of the equally important and unexpectedly wide distribution of labour intensive crops away from the village (see Figure 18).

The most important of these individual field crops, in terms of area, was sugar beet[1]. It is not known when sugar beet was first cultivated in Olyā. Before the opening of the Borujerd sugar refinery in 1967, there was very little cultivation, for the nearest factory was at Dorud (Shāhzand), over 100 kilometres away, and transport was extremely limited and expensive. Moreover, the small-holders generally complained about the amount of work involved in beet cultivation for, on small plots and in the absence of machinery, beet is a labour intensive crop requiring regular irrigation and weeding. Rejali, in his 1960 report, did not mention

1. Beet is sown in Olyā from February to May, after the end of the spring frosts, and lifted in late autumn.

Figure 19 Land use in Sha'bān, 1973



Intensive cultivation of summer crops
- especially vegetables, fruit trees and flowers

Mainly wheat
- also a few scattered parcels of beans and flowers

Mainly beans
- also parcels of sugar beet, clover, tomatoes and flowers

Wheat and beans
- also a few scattered parcels of other crops

Mainly pulses
- also parcels of wheat, barley, sugar beet, clover, grapes and fallow

Mainly tabrizi
- also a few cultivated parcels

Source: Fieldwork, 1973

the cultivation of beet. Since 1967 the area under beet has increased steadily, encouraged by the subsidy offered by the sugar factory (see Chapter 5.2.3.), and in 1974 it was estimated that about 1,800 hectares had been planted in Nahāvand district:

Area under sugar beet in Nahāvand district (ha.)

1972	1973	1974
1,200	1,400	1,800

SOURCE: Sugar beet office, Nahāvand city

NOTE: Of the area planted in 1974, only about 1,500 ha. actually germinated successfully. The rest was replanted with other crops.

Of the eleven villages under study only six, those nearest the city, had planted beet in 1973, totalling 40.3 hectares (see Table 33). However, in 1974 eight villages planted an area of 164.9 hectares, which was up by 124.6 hectares on the previous year. Of this total 45 hectares was planted by the landlords of Bābā Rostam (20 ha.) and Fiāzemān (25 ha.). Yields varied considerably from farmer to farmer but in 1973 averaged 23 tons/ha. in the study area, which was above the average of about 15-20 tons for the Nahāvand district as a whole. With the incentives offered to the farmer by the Borujerd sugar factory to cultivate beet, in the form of credit and subsidised fertiliser, a reasonable return was earned by the majority of farmers (see Chapter 5.3.). The sugar beet office in Nahāvand pointed out to me that yields would have been higher in 1973, and profits greater, but for an unusually hot spell of weather in the summer when the leaves were burnt and growth therefore reduced. The factory price of beet, which was 1,500 riāls/ton in 1973, was increased to 2,500 riāls/ton in summer 1974 and, although it came

Table 33 Area under sugar beet in the eleven villages

Village	Area harvested 1973 (Ha.)	Total yield (Tons)	Area planted 1974 (Ha.)
Gol-e Zard	10.6	307	9.1
Raziābād	2.2	48	9.6
Kuhāni			11.3
Jahānābād	1.7	51	18.6
Bābā Rostam	17.3[1]	304	36
Fiāzemān	1	30	29.3[2]
Sha'bān	7.5	177	50
Qal'eh-e Qobād			
Beyān			
Bābā Qāsem			
Milāb			1
TOTAL:	40.3	917	164.9

SOURCE: Sugar Beet Office, Nahāvand city.

NOTE: 1. The landlord, Amir Khān Zafari, accounted for 7.8 Ha. (119 tons) in 1973 and 20 Ha. in 1974 (which had, however, failed to germinate successfully and was ploughed up in June and beans planted in its place).

2. The landlord, 'Ali Ehsān Zafari, accounted for 25 Ha.

too late to influence farmers that year, many of those questionned were considering introducing or extending beet cultivation in 1975. The factory is also planning to increase its assistance to farmers in 1975, especially to those planting larger blocks of land, by the introduction of machinery on hire at a cheap rate, and it therefore seems likely that the beet area will continue to increase over the next few years.

Taken as a group, vegetables accounted for a more important alternative crop than sugar beet in 1973 (see Table 32), and included various cucurbits (melons, cucumbers, squash), potatoes, tomatoes, seed onions, eating onions, carrots, aubergines and sweet corn. They were grown by almost all farmers on a small scale, often at a corner of a plot of beans, for household consumption. However, only a small number of farmers purposely grew vegetables - especially potatoes and tomatoes - for the market. In the sample of farmers 14 (27%) grew potatoes in 1973, but only seven had 1000 square metres or more and regarded the crop as a cash crop. Tomatoes, brought by bus to Olyā from Pol-e Dokhtar as seedlings in May, were grown by ten farmers. Eight farmers were recorded as growing cucumbers; Mohammad Āqā Zafari of Bābā Rostam and his son, for example, shared a two jarib plot of cucumbers, planted under a young orchard of apricot trees, which were destined for the Nahāvand market (see Case 5 in Chapter 7). It was found that in the three villages nearest Nahāvand - Gol-e Zard, Raziābād and Kuhāni - a number of city people were renting land on which to grow their own vegetables, particularly the more valuable ones such as aubergines and sweet corn. Similarly, a number of "landless" villagers were renting small parcels of land to cultivate vegetables intensively for the market. In Jahānābād, for example, three men were growing cucumbers and melons on one hectare of land belonging to a villager now resident in Tehrān, who would receive half the crop in lieu of payment for the lease of his land.

The most remarkable field crops found in the study area were flowers, particularly gladioli. Their cultivation marks an important diversification and intensification of land use in the valley, though they occupied only a very small part of the total land area in 1973. Gladioli cultivation was centred on the village

of Sha'bān. The farmers stated that the first year of gladioli cultivation took place at the time of land reform, about 1962, when a villager who had a flower shop in Tehrān returned to Sha'bān and planted Dutch gladioli bulbs on a small plot of his father's land as an experiment. This specialist crop was cultivated extensively in Sha'bān in 1973 in small plots, often of only 200 square metres, totalling in all about five hectares. However, two farmers were each found to have about one hectare under cultivation in several plots. Of the 10 farmers included in the sample in Sha'bān only one had planted gladioli on 1000 square metres. In 1974 the total area had increased to about ten hectares and three farmers in the sample had 1600 square metres. Outside Sha'bān, only in the village of Kuhāni were flowers being grown, and then by just one farmer on about 500 square metres. The flowers were sold mainly in Tehrān, but also in Esfahān and Ahvāz, and were a very valuable source of income (see Chapter 5.3. and Case 7 in Chapter 7).

Flower cultivation requires initially a costly outlay[1] and a great deal of labour intensive work, and for this latter reason was well suited to Sha'bān, where land-holdings were small but the work-force large and progressive. It might be thought that such a valuable crop would be grown close to the village for easy guard against pilfering, but in fact the distribution of gladioli plots was widespread. When the flower buds were beginning to form, however, straw shelters[2] were erected near the plots and guard was constantly kept during the harvest. The climate and soil of the

1. The farmers stated that one kilo of bulbs cost about 350 riāls and that about 100 kilos were necessary to plant 1 ha. of land.
2. Guard was kept in this way over other market garden crops and also grapes during the harvesting period, for pilfering was a major problem in the open fields.

Plate 6 Gladioli cultivation in Sha'bān.

Plate 7 Wheat cultivation on the land of the former landlord, Amir Hosein Khān Zafari, in Bābā Rostam (see Case 8 in Chapter 7). The thinness of the wheat and the large number of wild oats and other weeds visible typify the generally poor husbandry of the landlords in the valley.

valley seemed well suited to the cultivation of gladioli; all that was apparently holding back more farmers was lack of horticultural knowledge, lack of confidence in the initial investment risk, and the worry of over-extending their labour on a risky cash crop at the expense of more reliable food crops.

Other crops grown in the study area in 1973-74 included tobacco, cotton and sunflowers but in all they occupied no more than a few parcels in the eleven villages[1]. One farmer in the sample had 1,000 square metres of cotton in Torkān Torkān and another farmer had a small plot of sunflowers; both were grown for their own household use. The climate is not well suited to these three crops due to the short growing season. Moreover, tobacco and sunflowers were not favoured by the small-holders, both because they could only be grown under government licence, being national monopolies, and also because they took a lot out of the soil and the fixed prices were generally considered too low to compensate for this and for the amount of work involved.

Opium Poppy

As was mentioned in section 4.2.1., opium cultivation was banned in Irān in 1955. The loss to Olyā was considerable because in the dry, temperate climate prevailing yields were high (between 5-10 kilos per jarib) and the income substantial. Thus, the re-introduction of opium from 1970-1972 inclusive was warmly welcomed, despite the fact that cultivation was a government monopoly and under the strict supervision of the Ministry of Co-operation and Rural Affairs. Cultivation was permitted only in a certain number

1. During fieldwork in 1973, six parcels of cotton totalling six jarib, two parcels of tobacco and two parcels of sunflowers were recorded in the eleven villages.

of villages each year and in each village its cultivation was confined to one block of land to facilitate supervision. Each farmer was then allocated a set area of land in the collective block, according to his nasaq, or the amount of land he held in terms of joft (see Table 34). Many of the farmers questionned said that the income derived from opium in these three years accounted for more than their total income from the rest of their land (see Chapter 5.3.). It should be noted that the opium was sold to the government at a fixed price of 3,500-4,500 riāls/ kilo, depending on its quality, and, given a yield of 5-10 kilos per jarib, the gross income could reach over 40,000 riāls per jarib.

Table 34 Opium cultivation in the eleven villages (jarib)

Table 34 Opium cultivation in the eleven villages (jarib)

	1970	1971	1972
Gol-e Zard		2/joft	
Raziābād		3/joft	
Kuhāni	1/nasaq	1/nasaq	1/nasaq[1]
Jahānābād	3/joft	3/joft	3/joft[1] (including landlord)
Bābā Rostam	3/joft	3/joft	Landlord only
Fiāzemān		2/joft	Landlord only
Sha'bān			½/nasaq
Qal'eh-e Qobād			2/joft
Beyān		2/joft	
Bābā Qāsem	2/joft	2/joft	
Milāb		2/joft	

Source: Fieldwork, 1973-74

Note: 1. To make up for flood damage in summer 1971, Kuhāni and Jahānābād were permitted to plant opium for a third year in 1972.

The opium poppy is particularly suited to agricultural conditions in Olyā in several respects. First, it requires irrigation only in spring, when water is plentiful. Secondly,

it can be planted in autumn, following wheat in the rotation sequence, and harvested in June, early enough for the land to be cropped again with pulses or melons. Thirdly, it is labour intensive, and provides useful employment. Finally, as already pointed out, the income from opium is substantial.

In 1973 and 1974, opium cultivation was again forbidden by the government except under licences which were granted solely to farm corporations and farm production co-operatives. The village small-holders were thus adversely influenced by government interference and deprived of a substantial source of income. In the Nahāvand district a total area of about 300 hectares was under cultivation at the two collectives of Arān (170 ha.) and Barzul (130 ha.) in the spring of 1974, but yields were lower than those obtained by the farmers in Olyā, and averaged only five kilos per jarib or less.

Tree crops

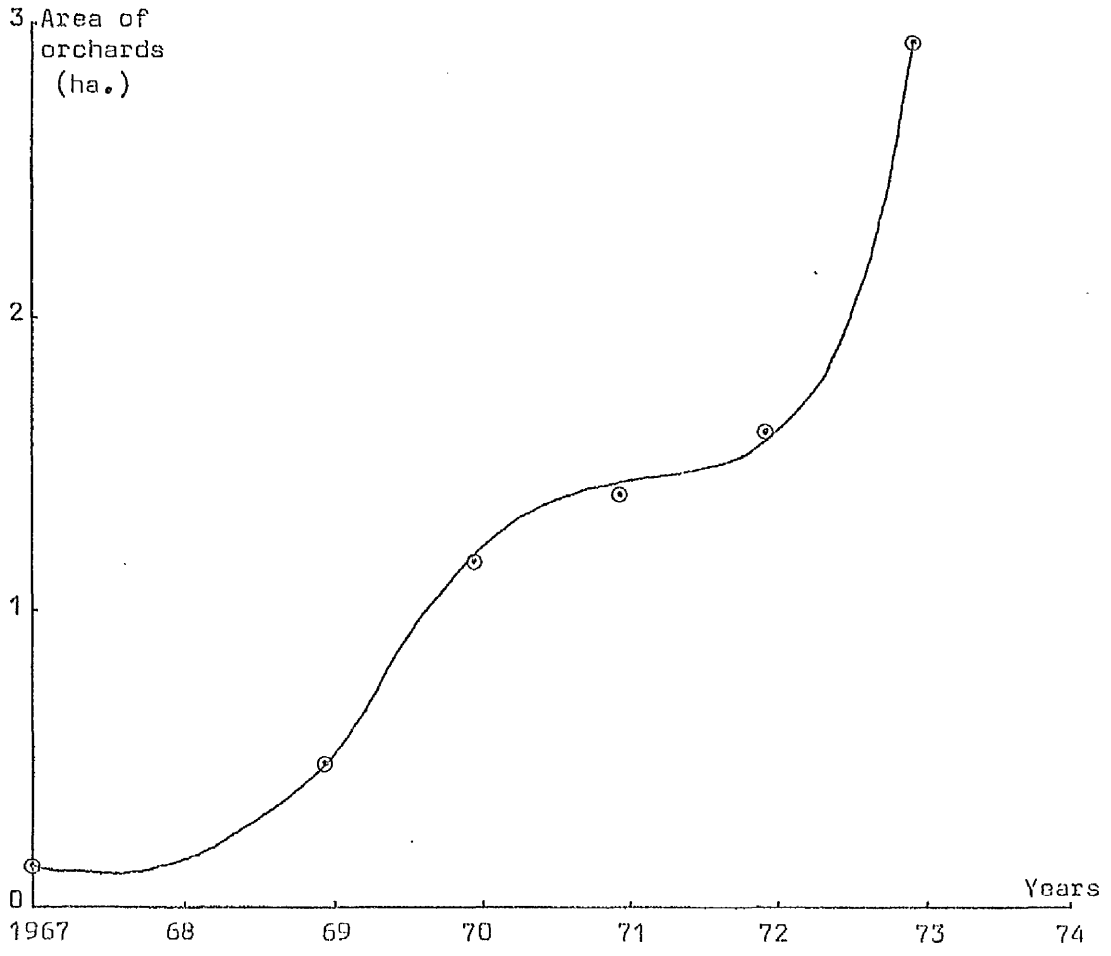
In terms of area, fruit trees, timber trees (mainly poplars) and grapes have been an important element in the eleven villages over the last decade or so. In particular, fruit trees have increased in importance. The air photographs of the study area taken in 1966 show that there was then only a small total area of fruit orchards. Those that did exist were not well spaced and largely consisted of apricot trees. Fruit trees of various types were, however, plentiful in small groups or as single trees along the edges of fields and in gardens close to the villages. They were regarded as a supplementary food crop. Thus, apricots were largely dried for winter consumption. It was not possible to find reliable estimates of the total area of orchards in the early sixties for the eleven villages; of the farmers in the sample only four had fruit orchards by 1968 and these totalled just over half a hectare (see Table 35).

Table 35 Sample area of fruit trees planted, 1968-1974 (ha.)

Village	Total pre-1968	1968	1969	1970	1971	1972	1973	1974
Gol-e Zard	0.105	0.15				0.25		0.04
Raziābād	0.15							
Kuhāni	0.2				0.6	0.45	1.0	1.55
Jahānābād				0.35	0.2	0.16		
Bābā Rostam				0.15		0.5	0.4	1.0
Fiāzemān							0.075	
Sha'bān					0.3		0.15	0.4
Qal'eh-e Qobād	0.1				0.1			
Total	0.555	0.15		0.5	1.2	1.36	1.625	2.99 = 8.38

Source: Fieldwork, questionnaire surveys, 1973-74

Note: The farmers sampled in Beyān, Bābā Qāsem and Milāb had no orchards.

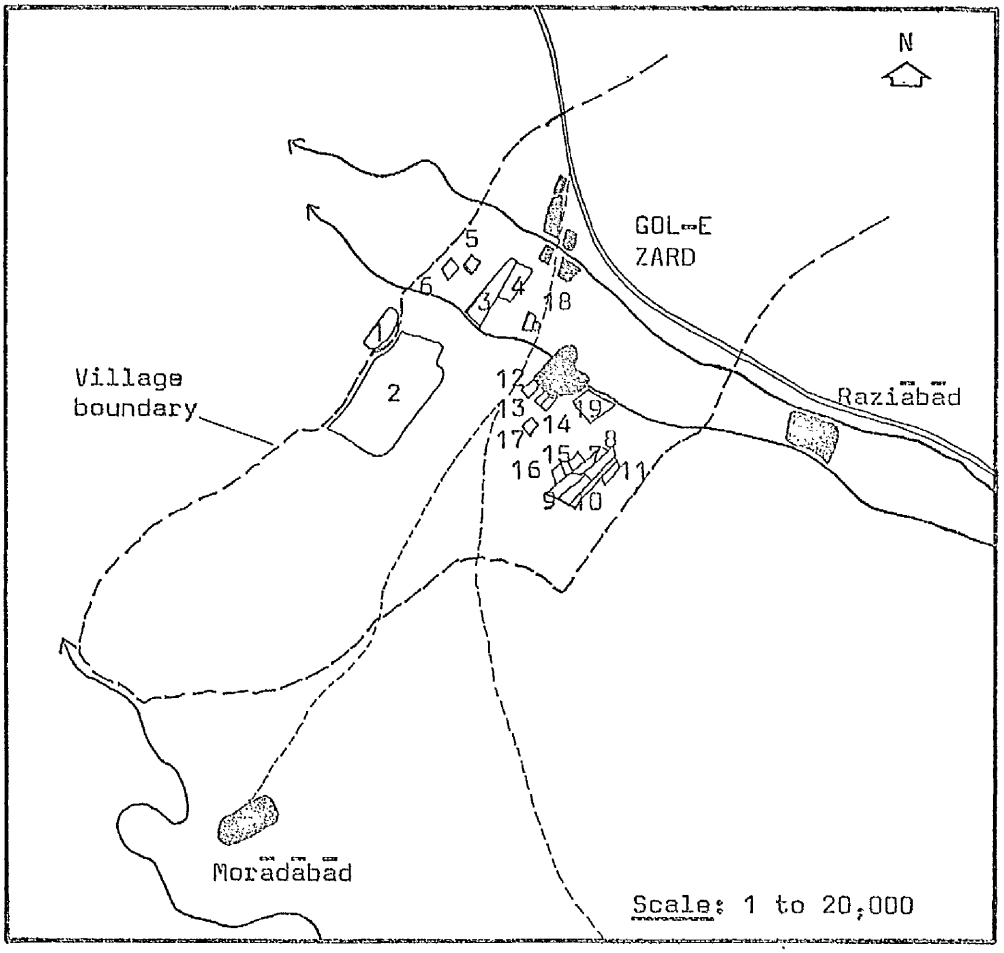


In 1967 John Metz[1], an American Peace Corps volunteer, started extension work in the Nahāvand valley and, together with his Irānian counterpart, devoted much effort to the education of those villagers interested in establishing new, correctly spaced orchards with improved varieties of trees, and the correct cultivation practices necessary to ensure successful, profitable fruit production. They were particularly successful in the village of Gol-e Zard where they helped to establish some 3-4 hectares of orchards between 1967 and 1970 (see Figure 20), and also in Kuhāni and Sha'bān, and their work stimulated the Agricultural Extension Department to encourage further orchard development (see below and Chapter 6.2.).

By 1973 a considerable variety of fruit trees - including red and golden (Lebanese) apples, apricots, peaches, pears, plums, cherries, quinces and nectarines - was under cultivation in both properly spaced orchards on a grid pattern[2] and in the old scattered manner along the edges of fields. The largest concentration of orchards was found bordering the Sha'bān canal between Jahānābād and Nahāvand city (see Figure 17), but the villages of Bābā Rostām and Sha'bān also had considerable areas. On the other hand, the villages of Fiāzemān, Qal'eh-e Qobād, Beyān, Bābā Qāsem and Milāb were almost devoid of orchards[3]. It was not possible to

1. The information in this section for 1967-1970 was largely gathered from correspondence with John Metz, now living in Ohio, U.S.A., and from his field notes and reports in the files of the Peace Corps Office, Tehrān (see Chapter 6.2.).
2. The extension workers advised apple and pear trees to be planted at six metre intervals in a grid pattern.
3. I am not clear why this was so: possibly the reason was the lesser amount of extension work done in these villages, possibly the adverse influence of the landlords.

Figure 20 The growth of fruit orchards in Gol-e Zard



Name of farmer (date of planting orchard):

1. Āqā Sami'i - 0.7ha. (1969)
2. Hāji Doktor Tabibiān - 7ha. (1969,72,73,74)
3. Taqi Zamāniān -) - 2ha. (1969,70)
4. Naqi Zamāniān -)
5. Sardār Khosravi - 0.4ha. (1969,70)
6. Karim Zafari - 0.4ha. (1969)
7. Ahad - 0.2ha. (1969, 73)
8. Ram Khodā Khosravi - 0.15ha. (1973)
9. Masht Rashid - 0.3 (1969)
10. Hosein Zamāniān - 0.2 (1972)
11. 'Abdol Rezā Zafari - 0.1 (1969)
12. Masht Rezā - 0.1ha. (?)
13. Hosein Zamāniān - 0.1ha. (1968)
14. Hosein Zafari - 0.1ha. (1972)
15. Hosein Zamāniān - 0.05ha.(old)
16. Aminollāh 'Ali Bakhshi - 0.07ha (old)
17. " " " - 0.035ha. (old)
18. " " " - 0.045ha. (1974

Source: 1. Air photos, 1966
2. John Metz, field-notes, 1968-70
3. Fieldwork, 1973-74

Plate 8 Well-spaced orchard of two-year old trees in Kuhāni, with sugar beet below them.

Plate 9 Old established orchard. The trees on the right have been pruned with the assistance of two extension corpsmen.

measure accurately the total area of orchards, but approximately 60 hectares of trees were under cultivation by summer 1973 (see Table 36). During 1973 alone some 25 hectares of new orchards (in seven of the villages in the study area) were planted, with the encouragement and assistance of several members of the Extension Corps (see Chapter 6.2.). The new trees were bought from the government-run nursery at Karaj, near Tehrān, at a subsidised price, and were of the best quality available in Irān. Several farmers in the village of Kuhāni, however, had established their own small

Table 36 The area of "new" orchards in the eleven villages

Village	Approximate total area, (Ha.) Autumn 1973	Area planted in 1973 (Ha.)	Number of farmers
Gol-e Zard	12	2.5	2
Raziābād	2	1.0	3
Kuhāni	19	10.5	18
Jahānābād	5	1.5	2
Bābā Rostam	9	7.5	15
Fiāzemān	0.2	0.2	
Sha'bān	8	2.5	2
Qal'eh-e Qobād	1		
Beyān			
Bābā Qāsem			
Milāb			
TOTAL:	56.2	25.7	42

SOURCE: Fieldwork, 1973.

nurseries and were propagating new trees and grafting new stock on to older trees. It was estimated by the Extension Department in Nahāvand that in all there were about 100 hectares of well spaced orchards of improved varieties of trees in the main valley of Olyā by summer 1974.

During the questionnaire survey an effort was made to discover the dates when the separate orchard plots of the farmers in the sample were planted. Table 35 and its accompanying graph illustrate very clearly the positive rate of extension of orchards over the last decade. By the summer of 1974, 19 (37%) farmers in eight of the villages had 8.38 hectares of orchards (see Figure 18). The market price of good quality fruit was high (the best apples reached 60-70 riāls/kilo) and all the farmers questionned showed a good deal of interest in orchard development. In 1974, however, rumours and speculation that their land might be taken over as a farm corporation had rather dampened their enthusiasm and led them to question the wisdom of present and future investment in fruit trees.

Walnut and almond trees were commonly grown in the valley, not in orchards but as individual trees at the edges of fields and in gardens. Some of these trees were surprisingly productive, though often of great age, and their yield was marketed on a small scale. For example, 1,000 walnuts in 1973 sold for 400-500 riāls. It was not made clear from farmers' answers why walnuts and almonds were not considered more seriously as cash crops.

Grapes[1] were grown widely but on a small scale in all the villages. Some were sold fresh, but most grapes were kept by the

1. Grapes are grown on the sides of deep trenches and flood-irrigated. In winter snow fills the trenches and preserves the roots, while the plants are protected with earth.

household as an important additional foodstuff, whether fresh, or converted into vinegar or a type of syrup. Of the 51 farmers in the sample, 27 (53%) had plots of grapes but most of these were small in area and yields were generally low (see Figure 18).

The last important tree crop found was a fast growing type of poplar, known locally as rāji or tabrizi, and was an indispensable item of house construction, for which it provided the beams. Any surplus above household needs was sold and might bring in 14-15,000 riāls per jarib - but, it should be noted, income from these trees was only realised about once every ten years. Tabrizi were particularly grown on either side of the Āb-e Nahāvand river and formed a dividing line down the centre of the valley from the village of Bābā Qāsem to the city. Other concentrations of tabrizi and willow, another but far less important timber crop, were found bordering the length of the Sha'bān canal and round all the villages except Milāb, which was above the line of irrigation and where water was in exceptionally short supply. Half of the farmers in the sample had parcels of tabrizi, but these were generally small in area (see Figure 18). The extent of tabrizi would seem to have changed little since 1960. The questionnaire survey indicated a small increase between 1973 and 1974, but fieldwork suggested this was not a general trend. It seems likely that tabrizi will continue to be a widely grown crop in the future, due to their importance in house construction, despite an increasing preference in Nahāvand and even amongst the wealthier villagers for iron beams and frames for roofs and windows respectively (see Chapter 5.1.).

4.2.3. LANDLORD-OWNED LAND (see Table 37 and Figures 17 and 18)

Land use in 1973-74 on that section of the village land retained by the landlords at land reform was based predominantly on a two-year rotation of wheat and beans, just as it was under the share-cropping system in 1960. The only pronounced difference was that the fallowed area had almost disappeared, even at the extremities of the Beyān and Fiāzemān canals where water had in the past been the limiting factor (see section 4.1.). Other field crops grown included barley, sugar beet, sunflowers, clover, alfalfa and potatoes, but they accounted for a very small total area. In Bābā Qāsem, for example, the Zolfaqāri brothers planted 40 Hectares

Table 37 Land use on landlord-owned land, 1973 (1974) (Ha.)

	Wheat	Beans	Barley	Sugar beet	Clover, Alfalfa	Sun-flowers	Tree crops
Khānum Zafari, Raziābād	18(11)	2 (2)			2 (5)		?
Amir Khān Zafari, Bābā Rostam	55(55)	20(30)	10(5)	8(20)		20 (0)	?
Hāji Dr. Tabibiān, Gol-e Zard	?	?	?		?		6(7)
'Ali Ehsān Zafari, Fiāzemān	40 (?)	30 (?)	2(?)	15(25)			?
'Abdol Amir Zamānian, Jahānābād	25(25)	15(15)			3 (1)		?
Javād Khān Zafari, Beyān	20(20)	20(20)	?				?
Hāji Vali Mo'azzami, Beyān	20(20)	20(20)					?
Zolfaqāri brothers, Bābā Qāsem	40 (?)	30 (?)			1 (?)		?

SOURCE: Fieldwork, 1973-74 NOTE: ? - not available

of wheat and 30 hectares of beans in 1973, but only 1 hectare of clover and no other crops. None of the landlords showed any real interest in fodder crops for they had no sheep or goats and the few cows they owned were looked after by villagers on a form of share agreement (see Chapter 5.2.1.). Attempts by several landlords to introduce alternative summer crops had largely floundered. For example, Amir Khān Zafari of Bābā Rostam planted 20 hectares of sunflowers in 1973 but the yield was poor and in 1974 his 20 hectares of sugar beet failed to germinate successfully and was ploughed in (see Case 8 in Chapter 7). It should also be emphasized that yields of even their main cash crops, wheat and beans, were in general much below those obtained by the small-holders.

The landlords also all owned land planted with tree crops, whether tabrizi, grapes or fruit trees. However, the total area was relatively small, the trees generally old stock and yields on the whole low. For the most part these tree crops had been planted before land reform and were cultivated by the villagers on a share basis (see Chapter 3.2.). However, three landlords -- 'Abdol Amir Zamāniān of Jahānābād, Hāji Dr. Tabibiān of Gol-e Zard and Javād Khān Zafari of Beyān and Tokeh -- have each planted new, properly spaced fruit orchards in the last few years. 'Abdol Amir by 1974 had a 1.5 hectare orchard; Javād Khān had a 4 hectare orchard in Tokeh; and Haji Dr. Tabibiān had 7 hectares of mainly Lebanese apple trees, which were being looked after by a gardener, and showed every sign of producing a valuable yield in the next few years.

4.2.4. CHANGES IN THE CROPPING PATTERN

Although in 1974 the cropping pattern was still one of fairly distinct crop zones with open fields (see Figure 18), there had been a number of important modifications to the pattern of 1960. First, there had been an increase in the number of crop zones. This increase was a direct result of the provisions of the land reform law, which provided in certain cases for a division of the land into blocks belonging to the landlord and blocks belonging to to the share-croppers (see Chapter 3). In the villages of Bābā Rostam, Raziābād, Fiāzemān, Jahānābād, Bābā Qāsem and Milāb, where the land was divided between a single landlord or group of landlords and the share-croppers, the number of crop zones was subsequently increased by each organising the land into new zones. Where there were several separate landlords, as in Gol-e Zard, Beyān and Qal'eh-e Qobād, a more complex pattern of zones emerged. In the peasant proprietor villages of Kuhāni and Sha'bān, however, the crop zones were largely undisturbed by land reform.

Secondly, on the land belonging to the small-holders there had been a reduction in the uniformity of the crop zones themselves. As Figure 18 shows, this reduction varied considerably from one village to another. In the villages of Milāb and Fiāzemān it was least marked and the belts of wheat and beans had few parcels of other crops inter-mixed with them. Elsewhere, as demonstrated in section 4.2.2., the cultivation of alternative rotation crops had increased considerably. In Sha'bān, this was particularly marked, and vegetables and gladioli were found amongst larger belts of wheat or beans (see Figure 19).

The third major difference was the much larger area under fruit trees in 1974 than in 1960 and their extension into the

traditionally open fields. As mentioned before, this was especially pronounced in 1973 and 1974. Along with laying down of orchards fencing had been erected to protect the trees from damage by animals. In Kuhāni and Sha'bān these developments had progressed farthest and the open fields had become somewhat dissected.

The crop pattern of the former large landed proprietors had changed much less over the past decade than that of the small-holders, for large belts of crops permitted operations to be mechanized. However, as mentioned in Chapter 5.2., they had not taken full advantage of this means to increase their productivity (see Case 8 in Chapter 7). Only Javād Khān Zafari had significantly altered his open fields in the village of Tokeh, outside the direct scope of study, by planting a four hectare orchard below the Beyān canal in spring 1974 and fencing it off.

That individual land ownership by the small-holders has not led to the disappearence of the traditional cropping patterns may be accounted for by the continuing need of the small-holders to grow food crops, such as wheat, and to follow similar cropping systems to facilitate access to fragmented plots for field operations, as mentioned in section 4.2.1.. But the changes which have been discussed above seem likely to continue at an accelerated pace with the encouragement of greater profits from the introduction of new crops or different rotations. Moreover, the increased availability of irrigation water to the whole of the village land area, better access to fields by the widening or construction of tracks, and the different abilities of the small-holders are encouraging a more individual attitude to crop choice.

4.2.5. CONCLUSION

In Chapter 3 it was suggested that the small farmer population in the study area, many of whom have only recently become individual owners of land, were becoming increasingly concerned in 1973-74 by the possible loss of their land to a government-run farm corporation. The argument for the establishment of such a large-scale unit is based on its alleged greater efficiency of farm management with the consolidation of holdings into larger blocks and the mechanization of operations, which it is alleged would result in a more intensive use of the land and increased production.

It is the contention of this chapter that such an intervention would lead to the disruption of what has in recent years come to be an area of intensive land use, with high production per hectare, and where on-going changes - the breakdown of crop zones, reduction of the fallowed area, introduction of more valuable summer crops and fruit orchards - suggest a growing progressive and able class of small-holders, responsive to prices and profit and willing to change their land use when it is in their best interests to do so. In contrast, there has been far less effort by the landlords to increase production, and yields on their land lag well behind those of the small-holders. The landlords, indeed, seem less capable as farmers and far less interested in developing the potential of their land than the small-holders.

The eleven villages under study show changes in land use to different degrees. For example, Kuhāni and Sha'bān, the two villages which were not under the control of large landed proprietors before land reform, have shown the most marked developments. Milāb and Bābā Qāsem have shown the least changes, but yields of wheat and beans, the traditional crops, have nevertheless risen sharply.

What is now needed is stability -- that is, an end to the disrupting effects of government changes in policy over land ownership, prices and monopolies (see Chapter 6.4.) -- so that the farmers can again feel sufficiently secure and confident to proceed with investments in their land.

CHAPTER FIVE SOCIAL AND ECONOMIC CHANGES

It is the aim of this chapter to examine systematically the changing nexus of the social and economic circumstances of the rural population of Olyä. The main emphasis will be placed on the position of the small-farm sector during the period 1971-74 when fieldwork was carried out. It was found very difficult to establish reliably the past position of, for example, the socio-economic structure of the family and various aspects of the economy of the small-holders. For this reason generalisations are unavoidable and must be excused; where possible fieldwork data has been presented to support the arguments put, but it is recognised that all too often this data is only partially complete.

5.1. POPULATION TRENDS

Chapter one (section 1.2.) briefly described the general characteristics of the population of Olyā and the study area, but it was suggested that the data presented in Table 1 , taken from the censuses of the Irānian Statistical Centre and the Nahāvand Malaria Department, should be viewed with caution. Fieldwork revealed differing opinions as to the village population size given by the censuses and in several cases villages, recorded in the censuses as being populated, were found to have been deserted. The censuses, moreover, offer very little household data concerning such matters as family size, birth and death rates, migration, literacy and employment, which have particular relevance to a study of the small-farm family and its changing circumstances. For this reason I attempted to collect such household data for the small-holder section of the village included in the questionnaire survey (see Appendix 1.). It is acknowledged that the data presented in this section contains some inconsistencies and errors due to the problems of defining questions and categorising responses accurately. For example, it was not always easy to decide whether a person was a permanent or absentee member of the household. Nevertheless, the information is considered worthy of inclusion in that it does show the household to be an evolving body and worthy of much closer examination as part and parcel of the process of agrarian change. With regard to the rest of the village population, there was not time to include the former large landlord families and the "landless" section, and such comments as are made are not to be considered of universal applicability even in such a small district as Olyā.

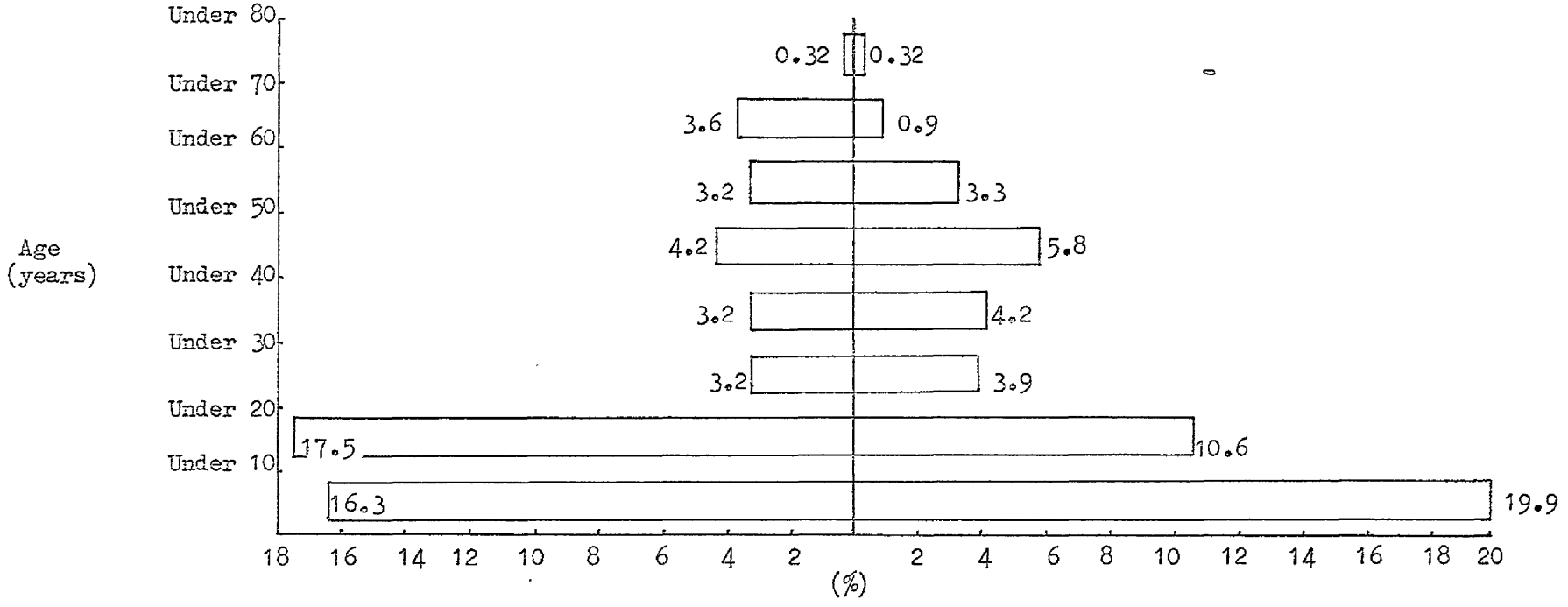
The sample population of the eleven villages is a young one.

The age pyramid displays this clearly by its very broad base (see Figure 21). Over 60% of the population is below 20 years of age, while only 5% is over 60. In the overall sample the two sexes are almost equally represented, with 169 males and 162 females. However, a group-by-group examination reveals the unbalanced nature of sex distribution. In almost all groups there is a predominance of females in the sex composition. The sex ratio for the age group between 20-60 is 129 females to every 100 males, but in the age group 10-20 there are only 60 females to every 100 males. These discrepancies cannot easily be accounted for with the limited demographic data collected during fieldwork, but they clearly merit further study. Nevertheless, certain explanations may be put forward for two other trends noted from the age pyramid. First, the sharp decrease in the number of males from the age group 10-20 years (58) to 20-30 years (10) may be accounted for by their establishment of new households in the village (13 or 3% of the total census), and by their movement into either the armed forces (9 or 2.1%) or the urban centres (19 or 4.4%). Secondly, the steady fall in the number of females aged 10-30 may be explained by marriage and their resultant departure from the household.

The large proportion of children in the population may be more clearly shown by an examination of family size. It was found that the average sized family of 6.5 members (recorded as "permanent" members of the household during the survey) contained 4.2. children and showed a higher number of boys than girls (see Table 38)[1]. The mean

1. The apparent anomaly of too many adults per household may be explained simply by the presence of relations other than the parents in the household, such as widowed mothers - 6 in the sample, and divorced daughters - 2.

Figure 21 The age pyramid of the sampled households showing the percentage of population in each ten-year age group, 1974



Source: Fieldwork, questionnaire survey, 1974

Note: 1. Data does not include those "absentee" from the household at time of survey.

2. The data for two households has been left out as unreliable.

Table 38 Composition of household members present in sample at time of survey

Village		Sample no. of families	Head of family	Wife	Son	Daughter	Daughter-in-law
Gol-e Zard	No.	2	2	2	6	5	
	%		13.3	13.3	40	33.4	
Raziābād		1	1	1	1	3	
			16.7	16.7	16.7	50	
Kuhāni		8	8	8	24	15	1
			13.7	13.7	41.4	26	1.72
Jahānābād		6	6	4	12	11	
			15.8	10.5	31.6	29	
Bābā Rostam		4	4	5	10	10	1
			13.3	16.7	33.3	33.3	3.3
Fiāzemān		2	2	2	1	1	
			33.3	33.3	16.7	16.7	
Sha'bān		10	10	9	28	17	
			14.9	13.4	41.8	25.4	
Qal'eh-e Qobād		4	4	4	12	10	1
			12.5	12.5	37.5	31.3	3.1
Beyān		6	6	6	8	11	2
			16.6	16.6	22.2	30.6	5.6
Bābā Qāsem		5	5	4	6	6	1
			16.7	13.3	20	20	3.3
Milāb		3	3	3	11	5	1
			13	13	48	21.7	4.3
Total		51	51	48	119	94	7
			14.9	14.2	34.4	27.6	2.3
Total census number, including absentees			51	48	154	135	7
			11.8	11.2	35.8	31.4	1.6

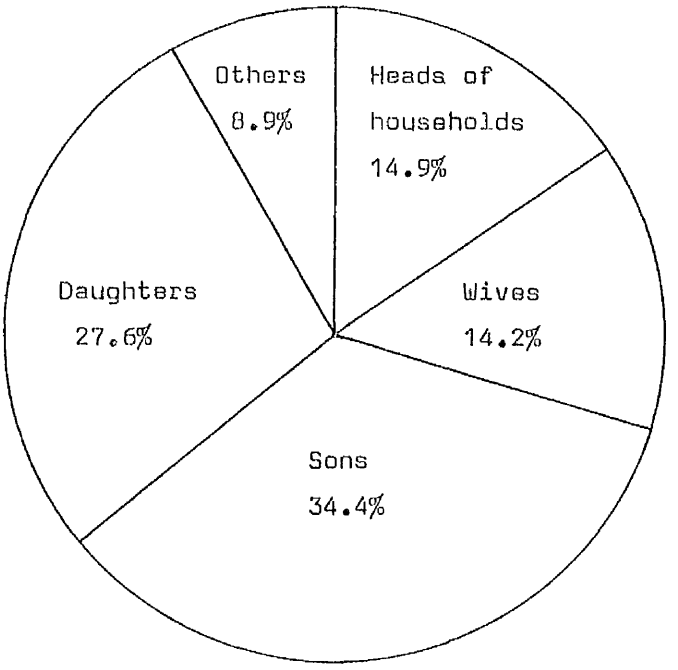
(continued on next page)

(Table 38 continued)

Village	Brother	Sister	Mother	Grand-mother	Grand-daughter	Grand-son	Sample total
Gol-e Zard							15 100
Raziābād							6 100
Kuhāni					2 3.4		58 100
Jahānābād		3 7.9	2 (widows) 5.3				38 100
Bābā Rostam							30 100
Fiāzemān							6 100
Sha'bān		(widows)	2 3	1 (widow) 1.5			67 100
Qal'eh-e Qobād						1 3.1	32 100
Beyān					1 2.8	2 5.6	36 100
Bābā Qāsem		1 3.3 (divorced)	2(widows) 6.7		2 6.7	3 10	30 100
Milāb							23 100
Total		4 1.2	6 1.8	1 0.3	5 1.5	6 1.8	341 100
Total census number, including absentees	8 1.9	9 2.1	6 1.4	1 0.2	5 1.2	6 1.4	430 100

Source: Fieldwork, questionnaire survey, 1974

Figure 22 Composition of sample households, summer 1974 (%)



Source: Fieldwork, questionnaire, 1974

Table 39 Number of women by cohorts of completed fertility who have had various numbers of children

Number of children	Number of women	%
None	1	2.1
1–3	5	10.4
4–9	39	81.25
10 +	3	6.25
Total	48	100%

Source: Fieldwork, questionnaire survey, 1974

Table 40 Number of children in sample households, 1974

	Male	Female		Male	Female
1.	3	2	27.	3	4(2)
2.	3	3	28.	4(1)	-(2)
3.	1	3	29.	5	1
4.	7	1	30.	-	2
5.	2(1)	4	31.	2(2)	3
6.	-(2)	2(1)	32.	1(3)	-(1)
7.	3	1(1)	33.	5	2(1)
8.	3	2(1)	34.	2(2)	5(1)
9.	4(1)	1(2)	35.	4(2)	3
10.	3	3	36.	4(1)	1(3)
11.	2	1	37.	1(2)	1(4)
12.	1(3)	1(2)	38.	2	-(2)
13.	1(1)	2(3)	39.	2	-
14.	1	2	40.	1	5(1)
15.	4	2(1)	41.	-(4)	-(1)
16.	5(1)	3(1)	42.	2(3)	2
17.	4	4(2)	43.	-	4
18.	5(1)	-	44.	3(1)	2(1)
19.	2(2)	2(2)	45.	1	2(2)
20.	1	4	46.	x	x
21.	2	4	47.	-	-
22.	-(1)	1(2)	48.	1(2)	-
23.	1(3)	-(4)	49.	x	x
24.	2	3	50.	3	1(2)
25.	5	1(1)	51.	1(2)	2(3)
26.	-	-(unmarried)		112(153)	92(141)

204(294)

KEY: 3 - Present in household at time of survey
(2) - Absent from household at time of survey
x - Left out as unreliable

SOURCE: Fieldwork, questionnaire survey, 1974

total number of children in the 51 families, whether of "permanent" or "absentee" status was found to be six. The largest family recorded was outside the sample and contained 21 children, the offspring of one father and three wives. Polygamy was, however, rare and only one man in the sample had two wives. The birth rate is therefore high and, though birth control has been available in Nahāvand city for about a decade, preference amongst the heads of households interviewed generally was for a large number of offspring, particularly of boys, for this is customarily regarded as a sign of manly dignity and fortune. Nevertheless, many of the men, especially the younger ones, were aware of the inconsistency of a large family with the wish for an improved standard of living and were showing a greater interest in contraceptive practices. It was not possible to raise this matter with the village women, but a doctor in Nahāvand city and a woman assistant at the Rural Cultural Centre (khāneh-e farhang-e rustā'i) in Kuhāni village both agreed that birth control was on the increase amongst the village women. Much more detailed study is necessary to assess the success of the campaign being undertaken in Olyā to decrease the birth rate.

Overall, therefore, there is little doubt that the population has increased considerably over the past decade, due to the sharp decline in infant mortality and the general increase in life expectancy, both of which have resulted largely from the spread of improved health and living standards, the eradication of cholera and malaria (still endemic amongst the tribal people who annually traverse the valley), the construction of piped drinking water systems and the availability of doctors and medicine. (see Chapter 6.).

Yet it would seem that the present population level of the

villages and individual households would have been much higher if outward migration in particular of men had not occurred. In the past migration of men largely took three forms. First, there was inter-village migration, often involving very small distances, of whole families in search of more and better land for cultivation. Such was the motive behind the movement of Mohammad Vali Sāqi's father from Alvand Kamar, in the mountains above Vesht, to Sha'bān where he bought land. Secondly, there was the migration of at first the head of the household to Tehrān (and other large cities) to establish himself in employment, to be joined later by his family. In some cases the family would not sever all its links with the village but might, if sufficiently well-off, continue to maintain a house and share-crop their land. Thus, 'Ali Mohammad 'Ali Bakhshi of Sha'bān, who worked in the Ābādān oil industry for much of his life, returned to his home and land six years ago to retire. Thirdly, temporary absenteeism of young males in the age-group 15-30 years was common. There has been a tradition in Olyā of annual winter migration to Kuwait for periods of usually two to four months for work as piece-paid labourers at salaries often four or five times those prevailing in Irān - 400 or 500 riāls per day in the late sixties[1]. Of the men in the sample households about half had visited Kuwait for work (and in their homes had souvenirs - rugs, wirelesses etc.) and several spoke Arabic.

At the present time, although temporary migration for winter work remains important, visits to Kuwait are less frequent, for wage levels in urban Irān have risen markedly over recent years. Similarly, inter-village movements have been increasingly replaced

1. Razavian, M.T. "Irānian communities of the Persian Gulf: a geographical analysis", unpublished doctoral thesis, University of London, (1975)

by "single-step" permanent emigration to towns and cities, especially Tehrān, often in the wake of a relative. The sample survey revealed that 34 of the 51 households had 89 "permanent absentee" members (20% of the total census population); these were largely in Tehrān.

Finally, it is interesting to note several exceptions to the rule of emigration. The purchase of land in Kuhāni village by two Tehrāni brothers in 1973 caused widespread interest and surprise tothe local population. Nevertheless, their intensive market-garden operation gives considerable promise of financial success. In a different vein was the inward migration into Jahānābād of the villagers of Kalindar-e Olyā after the flood of 1971 destroyed their homes.

Closely connected with population trends are the factors of education, social welfare and employment, for only a literate and healthy population can be a significant economic asset. Information on all three factors at the family level in Irān is limited. The general tendency is to regard the rural population of Irān as illiterate, diseased and unproductive, a national liability[1]. Before 1960 only three schools were established in rural Olyā (see Chapter 6.6.) and illiteracy was the general rule. Although it is difficult to define precisely the educational level of the members of a family, fieldwork did suggest a marked degree of improvement overall by 1973-74. This showed itself most clearly in the large attendance of children at the village schools (dabestān). There was a general acceptance by the adult population of the necessity of schooling for the future success of at least their male children, which was demonstrated by the attendance at the village schools of about 600 boys from the

1. Allen, H.B. "Rural education and welfare in the Middle East", page 2, London (1946)

nine villages for which data was gathered and all the boys aged between 7 and 12 years in the sample (see Table 41). This is a clear sign of the improving economic circumstances of the family for only a few years before boys were needed to help in the fields or to supplement the family income by tending sheep. However, long summer vacations of three months during the harvesting period permit help to be given when it is most needed. A considerable number of boys also attend secondary school (dabirestān) in Nahāvand city, travelling daily by foot or bicycle from the nearer villages and by bus or taxi (kerāyeh) from the farther ones. Several boys are receiving higher education at Hamadān agricultural college, Borujerd agricultural high school and at the technical school at Malāyer, and a few speak English; some are even applying to university in Tehrān, a remarkable sign of change. Not surprisingly the literacy rate was highest amongst those males aged between 11-30 years who had had the advantage of education. On the other hand girls are generally not considered to require any education (by their parents), but are deemed better employed in the household making carpets until they can be married. Only 80 girls from the nine villages were attending school in summer 1974. However, there are signs, as in Kuhāni, that elementary education for girls is increasing, though most parents do not allow their daughters to be taught by male teachers.

Thus there is at present a great and increasing diversity in educational attainment amongst the members of a household. Of the 51 families included in the sample, 110 boys were receiving education of which perhaps two-thirds could be classed as literate. On the other hand only 12 girls were receiving education and then seldom full-time. Similarly, six heads of households declared themselves literate or semi-literate, but none of their wives were

Table 41 Number of children attending elementary school in the eleven villages, summer 1974

Village	Boys	Girls
Gol-e Zard	x	x
Raziābād	30	5
Kuhāni	115	40
Bābā Rostam	40	-
Fiāzemān	40	-
Jahānābād	70	-
Sha'bān	x	x
Qal'eh-e Qobād	100	20
Beyān	100	-
Bābā Qāsem	52	a few
Milāb	50	10
Total	597	75

Source: Fieldwork, 1974

Note: x - not available

Table 42 Number of years of schooling of children in the 51 households

1. Sons 8,6; Daughter 1
2. Sons 5,1; Daughters 2,1
3.
4. Sons 11,10,8,7,6,4,3
5. Son 11
6. Sons ?,?; Daughter 3
7. Sons 7,5; Daughter some
8. Son 2
9. Sons 9,8,6,6; Daughter 4
10. Sons 2,1
11. Son 3
12. Son 6
13. Sons 6,6
14. (Father 3)
15. Sons 16,14,11,4; Daughter 5
16. Sons 7,3,2,1
17. Sons 7,2; Daughter 3
18. Sons 9,7,6,4,1
19. Sons 6,4,?,?
20. Son 2
21. Son 10
22.
23. Son 11; Others ?
24. Son 2
25. Sons 10,5,3,1
26.
27. Sons 7,6; Daughter 3
28. Sons 8,7,5,1
29. Sons 8,3,1,1
30. (Father 6)
31. Sons 7,4,3,?,?
32. Sons 11,9,7,7
33. Sons 8,5,2
34. Sons 11,9; Daughters 6,2,1
35. Sons 7,6,6,5; Daughters 1,1
36. Sons 9,3,?
37. Son 7; Others ?
38. Sons 6,6
39.
40. Son 7; Daughter 5
41. ?
42. Sons 11,7,7,3,1; Daughter 6
43. Sons 7,6,6,1
44. Son 4; Daughter ?
45. Sons 2,2
46. Sons 10,8,7,3
47. Sons 6,3,1
48. ?
49. ?
50. Sons 10,5
51. ?

Source: Fieldwork, questionnaire survey, 1974

literate. The last decade or so has therefore seen the emergence of a young, educated male rural class with knowledge and aspirations differing markedly from its parents. It is unfortunate that to-date little attention has been paid to this class, especially in view of the tendency for it to leave the village for an urban way of life, a tendency generally encouraged by parents, for in the next few years many of the rural and urban problems of Irān will closely concern this generation (see section 5.4.).

Just as illiteracy was the rule in 1960, so too insanitary conditions prevailed and disease was widespread. Cholera was reported to have decimated the population in the 1940's and malaria was endemic. Drinking water was drawn from shallow wells and the open irrigation canals and was the cause of much disease. Fieldwork in 1973-74 again suggested an improvement. The healthy appearance of the population of the eleven villages was confirmed by local doctors and the director of the Malaria Department who stated that cholera and malaria had been eradicated from the villages in the last few years by vaccination and annual DDT spraying respectively. It should be added that there is now little obvious malnutrition[1] and that both men and women use the medical facilities in Nahāvand city with enthusiasm, although medical expenses can be a considerable drain on their resources. Similarly, food consumption has increased in recent years, closely matching rising agricultural production. The staple food remains traditional farm produce: bread[2], dairy

1. The local doctor in Nahāvand city stated that vitamin deficiences were present, and showed themselves in a mild form of rickets and in skin diseases.
2. The villagers questionned stated that they required 300 kilos of wheat per annum per adult (half for children) for bread. This figure is approximately double the usual amount used in calculations by the World Bank of rural wheat consumption in Irān (see IBRD, 1970).

products, fresh vegetables and fruit when in season, and dried fruit in winter, and the main cooked foods, āb-e gusht, a soup made chiefly by boiling a little meat with home-grown split peas and other pulses, and various khoresht (a meat and vegetable stew); but this staple food is now both in greater abundance and being supplemented with growing amounts of bought meat, vegetables and rice. Additionally, tea is the main beverage, sweetened with cube sugar. The level of food consumption and its calorific or nutritional value could not be accurately gauged, but the villagers all agreed that they now ate far better than ever before. Certainly they gave every appearance of being healthy by their high degree of activity throughout the year[1].

The form of dress worn by the villagers varies considerably. The customary black, baggy trousers, shirt, knee-length coat with large pockets and wide sleeves, felt cap and giveh[2] are still worn by many of the older men, but European-styled clothes are increasingly taking their place. The young in particular wear jeans and the style of dress amongst the adult men largely depends on the wealth and status of the individual. A suit and hat with a brim is considered

1. Little detailed nutritional data of rural families has as yet been collected in Irān. Sen Gupta et al (1963), in a general survey of Lorestān, found that 98% of households surveyed were meeting with their calorie requirements, largely due to the high consumption of bread, but that anaemia and parasitism were widespread, there was a lack of calcium in the diet, and a high level of child mortality and of malnutrition of women of child-bearing age. Hedayat et al (1969), in a survey of seven villages in the plain of Varāmin between 1965-1967, drew similar conclusions.
2. Shoes, with the upper made of a thick yarn and the sole of a piece of rubber from a car tyre.

well-dressed, but ties are not worn[1]. For work in the fields the traditional clothes are more appropriate and generally worn by all. The women commonly wear long "pyjama" trousers and over them a brightly coloured cloth dress. On their heads they wear a knotted kerchief which facilitates the carriage of goods for the household. In their homes the chādor-e shab (ankle-length veil) is not considered necessary and is an encumbrance for work, but outside on the street, visiting friends, or shopping, the chādor-e shab is invariably worn by all females as a mark of social responsibility; despite the movement in Irān to ban the chādor-e shab, widely discussed in the village, social etiquette demands its use. Children wear a mixture of clothes and cheap plastic shoes. Finally, it is important to point out that clothing has for all villagers increased considerably in both quantity and quality; few now have a wardrobe consisting of only those clothes being worn.

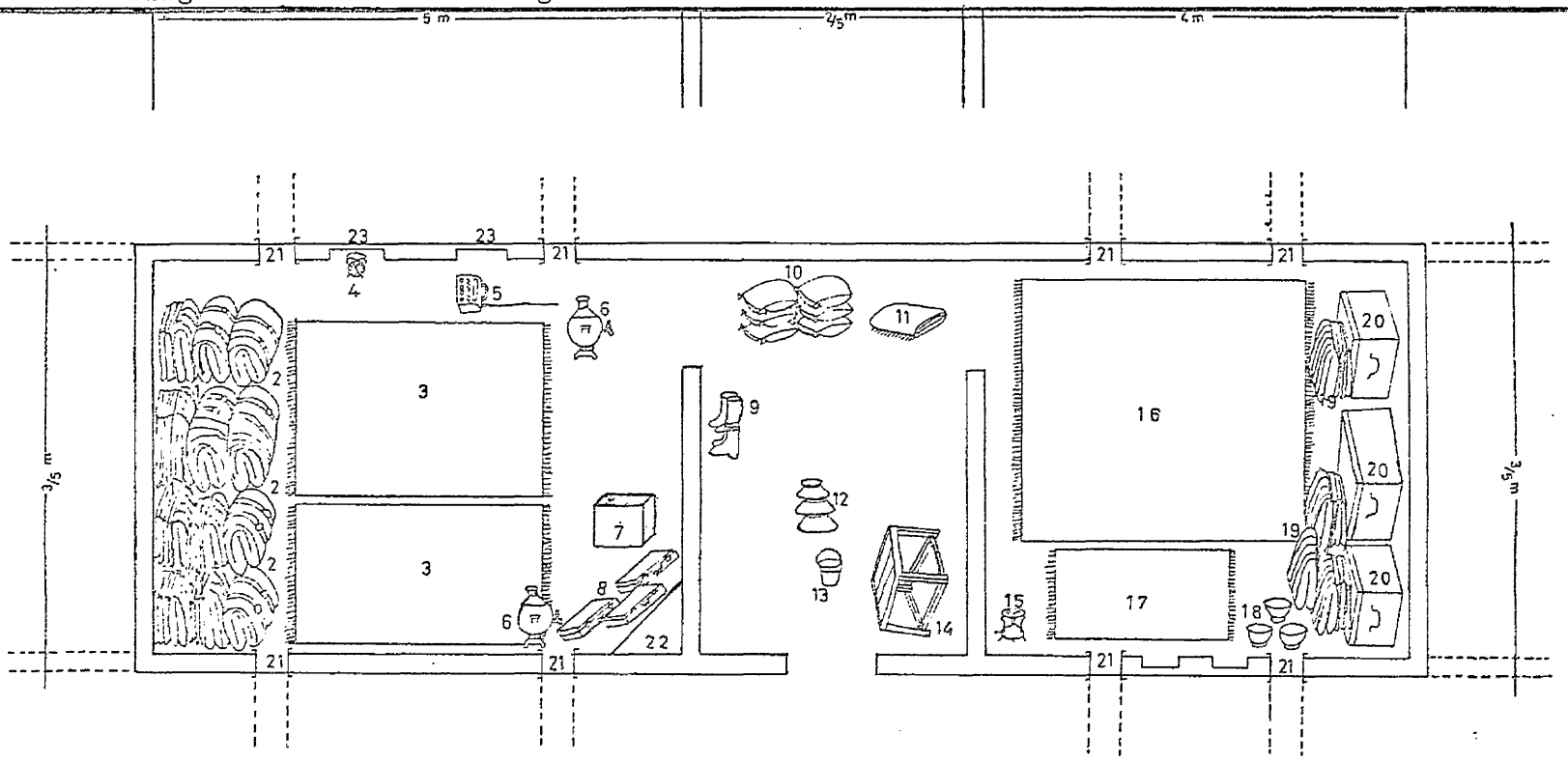
Housebuilding and household possessions may also usefully be studied to determine the scope of change in the villages of Olyā. The traditional building materials of mud-brick and wood are being at least partially replaced by more expensive and more prestigious fired brick, metal beams and metal window frames. However, thick mud-brick walls are not being completely replaced for the people recognise the value of their insulating properties. The house is now being built with larger windows, a veranda and often plastered walls, though otherwise generally in the same style and size - a single-storied, three-roomed, flat-roofed dwelling with a yard (hayāt) and surrounded by a high, protective, mud-brick wall. In the courtyard there is usually a pool, well or even running water in the form of a jub to serve household needs, but houses in some villages now have taps and piped water though this is the exception rather than

1. The tie has overtones of westernization and sometimes irreligion.

the rule. Each house has a latrine which in general is shallow and insanitary, but again a few households have installed more healthy, deep pit latrines. Partly for this reason, but also because the family animals are kept in the yard close to the house, swarms of flies abound in summer. However, the use of window and door mesh mettle screens and fly sprays are becoming more common. Of the 51 households sampled, nine had constructed new houses since 1971 using a mixture of new and old building materials, and offered a striking example of the improvement in living conditions which can be brought about by better housing. This was particularly true of Kuhāni and Jahānābād where the flood of 1971 had destroyed much of the central part of the villages. In Jahānābād the landlord had welcomed the opportunity to sell off uncultivated land by the village for new housing. In all the villages in 1973-74 there were considerable signs of either new houses or at least house extensions and re-building. For most families, however, their houses were small and over-crowded, with perhaps only one living room and one working room for ten people. Of the 51 households included in the sample, 32 had only two rooms and for them improvements are still necessary.

Household possessions have increased markedly. In particular, the number of carpets covering the floors of households - a good sign of affluence in Irān - have increased. Carpets are generally made by the family itself and sold when ready money is needed quickly, so their presence may be taken as indicating a growing wealth and security, especially with the recent sharp rise in their value. In addition, almost all the houses had a radio, clock, a paraffin cooking stove and samovar and occasionally such relative luxury items as a tape-recorder and record-player, souvenirs usually of working visits to Kuwait or of the pilgrimage to Mecca. None of the villages of Olyā have yet received electricity and rely largely on charcoal, animal

Figure 23 Inside a village house


5 m
2/5 m
4 m
3/5 m
3/5 m
21
23
23
21
21
21

dung (tapāleh), and paraffin for cooking and heating. Lighting is provided by kerosene lamps and occasionally by battery torches. The korsi[1] has not yet been superceded by stoves (bokhāri) as the main means of heating, but for cooking gas cylinders are beginning to be introduced in a few households, though charcoal is still favoured. Cooking is done in copper vessels but the use of aluminium pots and pans is increasing. Crockery is no longer rare but often reserved for guests and special occasions only.

The final element which may be usefully examined under the heading of population trends is the changing employment structure of the eleven villages. In the past the bulk of the population (that is, the male population) was employed in agriculture but there was a certain amount of non-farm employment as, for example, that of the mollā, shopkeeper, miller, blacksmith, irrigation official (ābiāri), bath-tender (hammāmi), teacher and house-builder (which varied from village to village according to their size and prosperity). Moreover, as has been mentioned before, there has traditionally been a winter migration of men to Kuwait and elsewhere for work.

Although it was not possible to gather reliable data for the employment structure of the total population of the eleven villages, it was for the 51 sample households, and from this two facts emerged. First, it was clear that although agriculture still employed the major portion of the male work-force, an increasing number of men were finding employment in non-farm activities in the study area. In particular, the service sector has seen the largest growth in

1. The korsi consists of a four-legged, low table covered with a quilt (lehāf) which extends on to the floor on all sides. Under the table a metal basin full of burning charcoal is placed which generates warmth. On the four sides of the table mattresses are laid and on the sides nearest the walls cushions as back, or head, rests. The people rest or sit under the lehāf in cold weather during the day and sleep under it at night.

employment opportunities over the last few years and the number of shopkeepers, house-builders, merchants, tractor and taxi drivers, village officials and government employees have all increased considerably. These opportunities have been eagerly accepted by the "landless" section of the village as offering greater security of income and more prestige than agricultural labouring. A number of the more prosperous peasant proprietors have also seized the chance of strengthening their economic and social status by taking up part-time employment as, for example, manager of the village co-operative, representative of the Irrigation Department or by opening a shop or starting a small wholesale business (see Chapter 6). Secondly, it should be noted that the employment of village women seems to have changed little from its traditional pattern. Women are occasionally employed in agriculture at certain labour-intensive periods, notably planting, weeding (especially of sugar beet) and harvesting, and generally on land belonging to the household. Otherwise their place is in the home in charge of food preparation, milking the animals, child-care and carpet-making. The only signs of change were the employment of several women as assistants at the kindergarten of the Rural Cultural Centres of six of the villages and the fact that some girls were allowed to attend school (see section 5.4.).

Fieldwork established the employment structure of the population present in the 51 sample households at the time of the survey in summer 1974 (see Table 43). 20.8% (69) of the population - that is, the working men - were found to be employed in farming. Of these, ten were also engaged part-time in non-farm employment, as either a shop-keeper, taxi, van or tractor driver or miller. All of the women were recorded as doing housework and some part-time carpet-making. The village girls above six years of age but unmarried were almost all engaged in carpet-making, with just a few (1.8%) attending school. School-boys accounted for 20.8% of the sample

and children below school age for a further 20.8%.

The conclusion to be drawn from this brief examination is that although the number of people in non-agricultural employment in the eleven villages is still small compared with the total working population, non-agricultural employment is relieving the direct employment pressure on agricultural resources and permitting an all-round growth in productivity and a rise in income levels. It should also be mentioned that there were signs of increasing use being made of uncosted family labour on the farm with the introduction by many farmers of more labour intensive crops, such as fruit trees and flowers, and more intensive farm practices (see section 5.2.).

Table 43 Employment structure of the sample population present in household at time of survey

	Number	%
1. Farmer (head of household)	51	15.3
2. Family-farm labourer	18	5.5
3. Housewife (housework only)	41	12.5
4. Housewife (part-time carpet-making)	21	6.4
5. Girl carpet-making	56	16.9
6. School-boy	69	20.8
7. School-girl	6	1.8
8. Shopkeeper	3	0.9
9. Taxi or van driver	2	0.6
10. Tractor driver	4	1.2
11. Flour miller	1	0.3
12. Children below school age	69	20.8
	341	103%

Note: The total appears as 103% because 3% (10) of the men in categories 1 and 2 were recorded as having part-time jobs in categories 8, 9, 10 and 11.

Source: Fieldwork, questionnaire survey, 1974

Plate 10 Outdoor class of school-boys in Raziābād.

Plate 11 Girls carpet-making in Gol-e Zard.

5.2. FARM PRACTICES

In a situation of land shortage, such as exists in Olyā, the only way to increase agricultural production is by expanding output per hectare. The improvements in farming practice which have made this expansion possible will now be examined.

5.2.1. LIVESTOCK

The Nahāvand Department of Agriculture produces annual estimates of the total shahrestān numbers of livestock based on the reports of its vaccination unit which tours the villages during the summer months vaccinating free of charge any animals presented to it. But it admitted that it could not give a reliable estimate of the total number of livestock in the individual villages of Olyā. Fieldwork only served to confirm the problems of census-taking even in a single village because, for one thing, with the exception of the wandering, largely wasteland-fed herds of sheep and goats, the animals are rarely seen. Cattle, cows, donkeys and poultry are generally kept inside the yard (hayāt) behind high mud-brick walls. Moreover, the numbers of sheep and goats vary considerably during the year, for the farmers of Olyā are on the whole "middlemen" in the meat industry, purchasing animals from nomads (whether Kurdish, Lori, Torki or Torkoshāvand) in the neighbouring mountain pastures (yeilāq), during the summer and autumn months, "fattening" them and aiming to sell them at the period of highest prices in spring just before the Persian New Year (Now Ruz). This near invisibility of animals is no doubt one of the causes of so little in-depth study of them to-date in Irān.

Not surprisingly then it is difficult to assess the changes

taking place in livestock numbers and their place in the farm economy. To come to terms with this problem fieldwork attempted to gather data for the 51 farms sampled. It should be noted that data collection did not cover a single full year, but rather attempted to assess the position in consecutive years. Because of the necessary reliance on the answers of the farmers an element of unreliability has been introduced. Nevertheless it is felt that the information collected is a useful guide to the present situation and to recent changes in the livestock sector.

On the 51 farms sampled in summer 1973, numerically sheep were by far the most important type of livestock (see Table 44). The sheep are of the fat-tailed variety and mainly of the Mehrābān breed[1]. They are reared for their wool, which is little in quantity[2] but fine in quality and suitable for carpet-making, for their milk and for their meat. The farmers said that in the past the sheep population was greater than at present, though this could not be substantiated. But in summer 1974 a repeat of the livestock census showed a small fall in the number of sheep. Although this might be taken as a sign of a trend, it should be pointed out that several farmers still intended to buy sheep later in the year after the harvesting period, and thus it would seem that numbers were after all much the same as in 1973. There was, however, widespread discontent with the shortage of institutional credit being offered by the co-operative societies and the Agricultural Bank to finance sheep purchases and anxiety that the rising price of sheep would in these conditions force out many of the smaller farmers from the fattening business in subsequent years. Table 45 shows that 27 of the 51 farmers had 580 sheep in 1973, only

1. Jones, R.G. "Sheep industry in Irān", U.S. AID, Tehrān (1964)
2. The average unwashed fleece weight recorded in the eleven villages was 1.5 kilos.

Table 44 Total number of animals on the 51 farms sampled in the 11 villages in summer 1973 and (1974)

Village	Number in sample	Dairy cows	Work cattle	Calves	Horses	Mules	Donkeys
Gol-e Zard	2	5 (4)	2 (2)	4 (5)	- (-)	- (-)	1 (1)
Raziābād	1	2 (2)	2 (-)	- (-)	- (-)	- (-)	1 (1)
Kuhāni	8	9 (9)	2 (2)	4 (9)	- (-)	- (-)	8 (10)
Jahānābād	6	11 (10)	1 (1)	8 (9)	- (-)	- (-)	7 (6)
Bābā Rostam	4	7 (8)	3 (3)	6 (5)	- (-)	- (-)	5 (4)
Fiāzemān	2	4 (4)	2 (2)	- (-)	1 (1)	1 (1)	1 (2)
Sha'bān	10	8 (8)	- (-)	2 (8)	- (-)	- (-)	7 (6)
Qal'eh-e Qobād	4	2 (3)	- (-)	- (3)	- (-)	- (-)	5 (5)
Beyān	6	13 (10)	3 (4)	7 (7)	- (-)	- (-)	8 (8)
Bābā Qāsem	5	7 (6)	6 (6)	4 (5)	- (-)	- (-)	6 (6)
Milāb	3	1 (-)	4 (4)	- (-)	- (-)	- (-)	3 (5)
Total	51	69 (64)	25 (24)	35 (51)	1 (1)	1 (1)	52 (54)
No. of farmers owning animals	1973	41	18	18	1	1	44
	1974	40	18	34	1	1	44
Largest herd	1973	5	2	4	1	1	3
	1974	4	2	4	1	1	2
Smallest herd	1973	1	1	1	1	1	1
	1974	1	1	1	1	1	1
Average herd size	1973	1.7	1.4	1.9	1	1	1.2
	1974	1.6	1.3	1.5	1	1	1.2

(continued on next page)

(Table 44 continued)

Village	Sheep	Goats	Hens	Turkeys	Bee hives
Gol-e Zard	-	-	-	-	-
	(-)	(-)	(4)	(-)	(1)
Raziābād	21	-	-	-	-
	(-)	(-)	(2)	(-)	(-)
Kuhāni	55	11	10	-	-
	(79)	(11)	(13)	(-)	(12)
Jahānābād	31	-	22	-	1
	(29)	(-)	(26)	(-)	(2)
Bābā Rostam	15	-	22	-	-
	(-)	(-)	(10)	(-)	(-)
Fiāzemān	150	7	5	-	1
	(150)	(7)	(4)	(-)	(1)
Sha'bān	53	20	50	-	1
	(131)	(10)	(617)	(-)	(1)
Qal'eh-e Qobād	121	15	18	2	1
	(45)	(-)	(4)	(-)	(41)
Beyān	50	19	25	1	6
	(31)	(8)	(13)	(1)	(7)
Bābā Qāsem	53	2	3	-	4
	(45)	(4)	(3)	(1)	(4)
Milāb	31	5	8	-	-
	(38)	(2)	(-)	(-)	(-)
Total	580	79	163	3	14
	(548)	(42)	(696)	(2)	(69)
No. of farmers	27	15	33	2	9
owning animals	25	11	28	2	12
Largest herd	150	15	12	2	4
	150	7	300	1	40
Smallest herd	3	1	2	1	1
	3	1	1	1	1
Average herd	21.5	5.3	4.9	1.5	1.6
size	21.5	3.8	24.9	1	5.8

Source: Fieldwork, questionnaire surveys, 1973-74

Table 45 Number of sheep on the sample farms

		Summer 1973	Summer 1974
Gol-e Zard	1.	–	–
	2.	– (sold 20 before Now Ruz)	–
Raziābād	3.	21	– (20 sold in autumn 1973; will buy soon if he can get a loan)
Kuhāni	4.	25 (holds s 50% share in these only)	25
	5.	5	4 (1 sold for 3,000 riāls in 1973)
	6.	–	–
	7.	–	–
	8.	–	–
	9.	–	–
	10.	– (8 died in flood of 1971)	–
	11.	25 (holds a one-third share in these only)	50 (one third his)
Jahānābād	12.	–	–
	13.	10	11
	14.	–	–
	15.	–	–
	16.	15	9 (none bought or sold in 1973-74, but 3 died in winter and 3 were eaten)
	17.	6	9 (2 lambs sold in winter 1973)
Bābā Rostam	18.	–	–
	19.	15 (kept in the village of Amirābād)	– (15 sold at Now Ruz)
	20.	–	–
	21.	–	–
Fiāzemān	22.	–	–
	23.	about 150	about 150 (still wants to buy more)
Sha'bān	24.	–	–
	25.	5 (sold 150 at Now Ruz)	80 (bought in spring)
	26.	– (sold 50 at Now Ruz)	– (hopes to buy at end of summer)
	27.	–	–
	28.	– (sold 80 in Ahvāz at Now Ruz)	–
	29.	18 (sold 20 at Now Ruz)	14 (will sell at Now Ruz)

(continued on next page)

(Table 45 Contd.)

		Summer 1973	Summer 1974
	30.	– (will but later, after harvest)	– (50 sold at Now Ruz; will buy later, after harvest)
	31.	– (12 sold in spring)	12
	32.	– (2 eaten by them only)	–
	33.	30 (bought recently; 40 sold in Ahvāz in spring)	25
Qal'eh-e Qobād	34.	18 (14 sold in Beyān in winter for 6,500 rials/joft)	8
	35.	–	–
	36.	43 (bought in early summer; 60 sold in winter in Borujerd)	–
	37.	60 (one third is son's share)	37
Beyān	38.	17 (sold 100 last winter)	10
	39.	3	4
	40.	10 (sold 10 in Borujerd in autumn 1973)	–
	41.	–	3
	42.	–	–
	43.	20	14 (sold 70 at Now Ruz in Ahvāz)
Bābā Qāsem	44.	9	6 (none bought or sold in 1973–74)
	45.	14	10 (2 died, 2 eaten in 1973–74)
	46.	5	1 (5 sold in village in winter; no cash to buy more this year)
	47.	10	12 (5 sold locally in autumn 1973)
	48.	15	16 (7/8 sold in winter to nearby villages)
Milāb	49.	10 (10 sold in autumn 1973)	20
	50.	6	8
	51.	15	10 (5 sold locally in winter)
Total		580	548

Source: Fieldwork, questionnaire surveys, 1973–74

one household in Fiāzemān had over 100 animals, 11 had 10 or less and the average was 21. In 1974 25 farmers had 548 sheep.

Goats were also kept for their milk and meat but in much smaller numbers. Only 15 farmers kept goats in 1973 and the largest herd was of 15 animals (see Table 44). In 1974 their numbers dropped even more steeply than sheep, falling from 79 to 42.

Traditionally sheep and goats in Olyā were grazed on the village wasteland as natural pasture for much of the year, supplemented by "on-farm" grazing of wheat stubble and other remnants of the harvest in late summer and stall feeding of clover and straw in the winter months. Ten of the villages under study had rights to graze (or cultivate) different areas of unirrigated land of the lower hill slopes adjoining the village irrigated land (see Chapter Four). The exception was Fiāzemān which had no such rights, being hemmed into the Āb-e Nahāvand valley by the land of Tokeh village, and from where a spring transhumance of flocks was made to a traditionally visited grazing area on the high mountain slopes, known as Kuh-e Chālkhār, some three hours by donkey south of the village. It would seem that the villagers have been bringing their animals here for some 90-100 years, despite the hostility - now only verbal - of the Hasanvand section of the Lori nomadic population which regards all the pastures along the edge of Lorestān and Nahāvand as its own[1]. The flocks were brought down to the village after about three months, in late-June/early-July, when the mountain grazing was sparse and they could be fed on the stubble. The livestock economy of Fiāzemān thus takes on a far more semi-nomadic

1. Black, J. "An ethnographical and ecological survey of Lorestān, Western Persia: modernization in a nomadic pastoral society", Middle East Studies, Vol. 10 (2) (1974)

than sedentary appearance with the result that sheep and goats have a greater significance in the overall farm economy and individual flocks are larger than in the other villages under study (see Case 6 in Chapter 7). In 1974 there were only 13 tents (or households) with an average of some 150 animals each. Before land reform the villagers of Fīazemān said that the numbers of tents had been far more numerous and that smaller numbers of flocks from other villages had also made this annual movement to take advantage of common spring grazing. It is not possible to tell whether this also suggests a fall in the sheep and goat population, but the villagers say this is the case. It may be, however, that wasteland grazing is made up for by the greater cultivation of clover and alfalfa as fodder, mentioned in Chapter Four. The future of the transhumant economy is in any case in grave doubt if rumours in Nahāvand in 1974 were correct, for there would seem to be plans afoot to forbid mountain grazing rights to all but the nomadic population who have always vied with the villagers for its use.

At night during the summer months the village flocks return to the separate farm hayāts for safe-keeping. But for three or four months in winter, when temperatures fall below zero and snow covers the ground, the sheep are customarily kept in underground stables - caves cut out of the earth under the hayāt. Occasionally they are as much as ten metres below the surface and reached by a mud stairway and are dark, dank and unhealthy. The rate of death and disease is not known but it is certain that the animals put on little weight. If the winter is particularly harsh, moreover, lambing may occur before its end and in such unhealthy conditions the high mortality rate is exacerbated[1]. Fodder supplies may also run short and animals

1. Unfortunately farmers do not keep written records of flock numbers, mortality rates or twinning rates.

die. Of the 51 farms sampled, 34 (67%) possessed underground stables for winter use. The remainder generally had fewer sheep and therefore no need for a large stable or, in four cases, lived in newly built houses and kept their animals above ground in more hygienic mud-brick stables, but these were small, dark and poorly ventilated - probably to lessen the effect of the cold. The prevailing fear amongst the majority of farmers was that the winter cold would kill their animals[1]. A demonstration, "show-piece" stable above ground will be necessary to convince the farmers of the ability of the animals to withstand cold, due to the thickness of their coats, and the value of fresh air conditions for their health and weight gain. Nonetheless, it was commonly recognised that disease in the underground stables was a major problem (see section 5.2.3.).

Sheep and goats are largely kept for commercial production as meat on-the-hoof (see section 5.3.). Cattle, donkeys, poultry and other animals, however, are first and foremost for home subsistence, though they often take on an additional commercial role. Of the total cattle population in 1973 in the 51 sample households, over 50% were dairy cows. They may be regarded as a very special element for the household as they provide year-round milk for cheese, butter, yoghourt and dugh which are staple food products. They produce an average of 800-1,200 litres of milk per annum, which is far above the figures of about 100 litres for

1. It might also be usefully noted that shearing in Olyā, as in the rest of Irān, takes place only after the summer has started and there is little, if any, possibility of further cold nights. This is much later than is generally accepted in Britain or the United States. Because of this, it is not unusual for the sheep to suffer from heat in the period before shearing.

goats and 50 litres for sheep[1], and excess products above household needs are generally sold locally in the village or in Nahāvand city (see section 5.3.). On the 51 farms sampled the largest herd was five cows and the smallest one (see Table 44). The cows are kept almost completely inside the hayāt and fodder, especially clover, brought in for them. In 1974 there was talk in Kuhāni of the possible establishment of a small milk-processing plant to make use of the excess milk of the surrounding villages, following the success of two such plants in the village of Deh Ful some ten kilometres west of Nahāvand city where the household dairy industry has expanded considerably and cheese is now marketed as far away as Hamadān and Borujerd. Once again, however, the inability of the several individuals concerned to secure financial guarantees from either the co-operative organization or the Agricultural Bank was delaying matters. Without a processing plant it would seem likely that milk production and dairy cow numbers will remain fairly static in the future.

Work cattle (gāv-e kār) are far less important than cows and have been declining in number for more than a decade as they have been replaced by tractors for draft work, whether ploughing or threshing (see section 5.2.2.). Fieldwork revealed that in 1973 18 (35%) of the 51 farmers still had a work team (gāvband) or a half share in one. The farmers gave mixed views for the retention of work cattle depending on how they costed the upkeep and operation of their animals. Most agreed, however, that on irrigated land tractor-pulled ploughing resulted in a deeper tilth and saved a great deal of time. On the other hand they invariably favoured the gāvband for deimi ploughing, as being more adaptable to hill-slopes and less disruptive of the soil.

1. Department of Agriculture, Nahāvand

Finally, calves may be mentioned as a minor but useful commercial asset. They are generally fattened and sold locally for their meat. Table 44 shows an increased number from 1973 to 1974 but this may be accounted for by annual variations. There was no clear evidence to suggest an increasing emphasis on cattle production either for beef or milk; mutton is in any case preferred to beef in Irān.

Other work animals, in addition to cattle, include donkeys and a small number of mules and horses. Donkeys are by far the most common in the study area and are used for the transport of both goods and people. Only seven of the 51 households did not have a donkey and then there was a good reason; for example, in the case of Nāmdār 'Ali Bakhshi of Sha'bān who owned a tractor and Safar 'Ali Zafari of Fiāzemān who was too infirm to work and whose farm was run by his sons. Only one farmer in the sample owned a horse and mule and this was Shāh 'Ali Zafari of Fiāzemān who took part in the annual transhumance to the pastures of Chālkhār and needed them for transporting his tent and belongings (see Case 6 in Chapter 7). As a means of transport, other than in the village, donkeys, mules and horses have been largely superceded in the last few years in the Nahāvand valley by taxis, vans and motor-bikes (see Chapter 6.3.).

Of the remaining small livestock, hens and bees make the most important contribution to food supplies and income. Improvements in both poultry and bee-keeping by a few farmers have shown that a considerable income can be earned from these hitherto purely subsistence products, particularly in view of the growing market and higher prices for chicken meat and honey in neighbouring towns. Traditionally just a few hens were kept to provide eggs for household needs, and in 1973 the average number on the 33 farms with hens was

Plate 12 Chicken project in Sha'bān.

Plate 13 Old and new bee hives in Qal'eh-e Qobād.

five. Up to 1973 the only notable exceptions to this rule in the eleven villages under study were Ardeshir 'Ali Bakhshi of Sha'bān, who ran three hen houses in his hayāt each with differing ages of chickens and totalling about 1,500 (increased to 3,000 in summer 1974), Khodā Morād of Sha'bān with 500 chickens and a farmer with about 300 chickens in Jahānābād (see Chapter 6.2.). In spring 1974 two other farmers in Sha'bān, both included in the sample - Hāji Mohammad 'Ali Bakhshi and Qobād Shojā'iān, jointly established a hen house of some 600 chickens (see Table 44 and cases 4 and 7 in Chapter 7). Other farmers in Kuhāni and Beyān were also showing interest in similar plans.

Bees are of less importance, yet honey is enjoyed by the villagers as a luxury item. To-date, however, the traditional type of round, mud and straw hive and poor cultural practices have made large-scale production uneconomic[1]. But the introduction by the Agricultural Extension service of modern Langstroth bee hives four years ago, and their much greater success in production terms - 10-20 kilos per hive rather than the usual 3-8 kilos - is slowly having results (see Chapter 6.2.). Only nine of the sampled farmers had hives in 1973, but this increased to twelve in 1974. Of these all but three had new hives alongside their old ones. The most remarkable developments were in Qal'eh-e Qobād and Kuhāni where two farmers purchased forty new hives and twelve new hives respectively.

To sum up, it has been shown that individual numbers of farm livestock are generally small, but that the total village number is considerable. The animals have traditionally been viewed for

1. Meier, D. "Beginning beekeeping in Irān for American Peace Corps volunteers", Heydarābād Livestock Research Station, Karaj (1968)

subsistence, but the commercial outlook is growing (see section 5.3.). There would seem to be signs that animal husbandry is adapting to the changing economic climate and that specialisation, particularly in poultry and bee-keeping, is beginning.

5.2.2. CULTIVATION EQUIPMENT[1]

The main tillage implement in Olyā until recently has been the animal-drawn wooden plough (gāv-e āhan), with a steel-tipped wooden wedge but devoid of a cutting edge and having very restricted powers of furrow-making or inversion. Thus it left a mulched rather than furrowed surface[2]. Of the 51 sampled farmers in 1973 32 still owned a wooden plough, but only 18 farmers had a pair of oxen (or a single ox), which are necessary to pull it. The traditional plough is, however, being replaced by the tractor-drawn metal plough and disc. The villagers suggest that this replacement started some ten to fifteen years ago, when tractors began to be widely available in western Irān. By 1968 there were about a dozen tractors in the area around Nahāvand city. John Metz, a Peace Corps volunteer who arrived in Nahāvand in that year (see section 6.2.), recorded six individuals in Olyā as owning tractors: the three landlords of Beyān, Fiāzemān and Bābā Rostam, two farmers in Sha'bān and one in Qal'eh-e Qobād. In 1973-74 the number of tractors in the eleven villages under study alone was 20-30 (see Table 46), and four farmers in the sample were found

1. On this subject the reader's attention is drawn to Wulff, H.E. "The traditional crafts of Irān", page 260-277 (1966)
2. Bowen-Jones, H. "The Land of Irān", page 584-586, (1968)

Plate 14 Ploughing by gāvband in Milāb

Plate 15 Cutting fodder with a scythe in Kuhāni

to own tractors (2 BM Volvos and 2 Massey-Fergusons) and related equipment: plough, disc and thresher[1]. It might be thought that the availability of tractors was now sufficient to displace the old wooden plough completely. Yet the latter was still partly used by 23 (45%) of the sampled farmers for, although they knew

Table 46 Approximate number of tractors in the 11 villages, 1973-74

Village	Farmers	(in Sample)	Landlords
Kuhāni	1	(-)	-
Jahānābād	1	(-)	-
Bābā Rostam	2	(1)	1
Fiāzemān	3-5	(1)	1
Sha'bān	12-15	(2)	-
Beyān	-	(-)	1
Bābā Qāsem	1	(-)	-

SOURCE: Fieldwork, 1973-74

it was slower and gave a shallower tilth, nevertheless the fact that it disturbed the ground only a little and produced a fine tilth was advantageous on sloping land and on deimi land where a metal plough increased the susceptilility of the soil to erosion and to water loss by evaporation[2]. By not costing their own labour or the upkeep of their cattle, some farmers even considered its use

1. A precise figure of the total number of tractors cannot be given as it was not possible to be certain how many tractors were working elsewhere on contract, especially in the neighbouring area of Lorestān.
2. Keen, B.A. "The Agricultural Development of the Middle East", page 53, (1946)

cheaper than hiring a tractor which cost 60-70 riāls per jarib of irrigated land (or 140 riāls per hour) and 50 riāls per jarib of deimi land. But 45 of the 47 farmers interviewed who did not own a tractor now hire one to work at least part of their land (22 do not use the old wooden plough at all) and it would appear that the majority consider the monetary expense of hiring a tractor to till their land to be more worthwhile in terms of higher crop yields and far less trouble than maintaining a pair of oxen.

Although a plough is generally used in Olyā for field tillage, digging by spade (bil) is quite common, especially for vegetable cultivation, flowers and grapes. A variety of local iron spades are found, apparently developed for varying conditions and needs. One has a triangular blade that easily penetrates hard soil, with a wooden wedge as a footrest; another is longer, square-tipped and has turned over edges that act as footrests. For all the irrigated land, borders surrounding each field have to be raised and this is done with a short, broad spade or scoop (kartqar), guided by one man and drawn, by a pair of ropes or chains, by another man. This same scoop is used to provide the furrows and ridges characteristic of pulse and vegetable cultivation (see Chapter 4.1.). Irrigation canals are similarly all hand-dug by spade. The only change that was observed in these implements was the use by some farmers of steel spades, of greater durability but more expensive and no more efficient. Besides the spade the farmers also use a pointed iron pick (kolang) to break up the soil and occasionally a large wooden mallet to beat the clods. Traditionally field-bed preparation made use of a wooden spiked harrow or leveller to prepare the soil prior to planting and afterwards to cover the seed, but the introduction of the tractor and metal disc or harrow have now largely taken their place. As yet, however, the mechanical hand plough or "rotavator"

has not been introduced and is not readily available except in Tehrān. For weeding a hand trowel (gos-e kāri) is used by all, even on the larger, consolidated fields of the landlords. Though a laborious process, thorough weed control would seem to be of great importance for yields especially during the early stages of crop growth[1].

Cereal crops in Olyā are generally reaped with a hooked hand sickle (dās). The stalks are gathered into the left hand and cut using the right hand in a smooth action as near to the soil as possible which ensures the minimum loss of grain and the maximum collection of straw. A long-handled scythe (dās-e bozorg) is not used for this purpose as it would knock too many ears of grain off the stalk and into the field, but it is used to cut clover and alfalfa for fodder (see below). For the majority of small farmers, with fragmented fields of generally less than half a hectare in area, combine harvesters cannot at present be used. However, for the former landlord class, with large consolidated wheat areas,combines have been used increasingly since land reform. The majority hire a combine with driver at a cost of usually 12-15% of the harvest. In early August 1973 six combines were seen at work in the Olyā valley. Only 'Ali Ehsān Zafari of Fiāzemān owns his own combine (in partnership with three villagers) and this is also let out on hire.

The harvested sheaves of wheat or barley are traditionally piled into a circular heap on the threshing floor and, with the use of a threshing machine (kharmankub) - a wooden frame holding a set of rollers fitted with iron blades that is drawn by cattle or donkeys - are broken up to separate the grain from the husks. Of the 51 farmers sampled, 34 (67%) owned a traditional thresher in

1. Keen, B.A., pages 51-52, (1946)

Plate 16 Hand sickle (dās) used for reaping cereal and fodder crops.

1973. But this method of threshing has been displaced to some extent by new machinery. Because of the availability of tractors, a considerable number of farmers hitch a disc harrow on and run it over the heap on the threshing ground for about two hours which is sufficient to break the straw and speed up the entire operation from about five days to one. Fieldwork showed that the most recent introduction, a mechanical thresher (kharmankub-e mashin) which is linked to a stationary tractor for power, is the most efficient, time-saving method and is being increasingly used in Olyā. About half the sample used a mechanical thresher for at least part of their harvest. In this case tractor and thresher are hired by the farmers at a cost of 200 riāls per hour in 1973, or about 150 riāls (¾ hour) per jarib of wheat. When the straw is broken up sufficiently and the husks have been separated from the grain, the whole is winnowed by being cast into the air with a five-pronged, wooden fork (ārshir), so that the wind carries the chaff and husks away while the grains drop straight down. The chaff is valuable fodder for the animals and is carried to the village for storage in coarse nets (tur) usually on donkey back. A final cleaning of the grain is done by sifting with a sieve (kām) to separate the grain from the remaining straw, husks and gravel. It should be noted that chick-peas and beans are traditionally harvested and threshed in much the same way as cereals.

The scythe has already been mentioned. It is another recent introduction in Olyā, brought originally, it is thought, by Kurdish travelling hay-reapers in the mid-sixties who found seasonal employment in the Nahāvand valley cutting clover and alfalfa on contract for farmers at a cost of about 100 riāls per jarib. They usually travelled in groups and it would take three men about one hour and a half to cut one jarib. Since 1972 several

blacksmiths in Nahāvand city have begun to make and sell the scythe for 700-1000 riāls and its use is spreading for it permits a much faster cutting of fodder than does the hand sickle.

Finally two other relatively new implements to be observed in the villages are small hand pruning shears (qeichi) and pesticide sprayers (sampāsh-e dasti). With the growing interest in the improvement of vines snd especially fruit trees, extension workers in the study area have encouraged the use and purchase of secateurs to take the place of the less efficient pruning knife or small saw (see Chapter 6.2.). But few people own them and only two of the sampled farmers owned a pair. Spray equipment consists of a back-pack pressure canister with a hand-directed nozzle. Its much increased use over the last few years is largely due to inclusion in the "package" contract organised by the sugar beet office with the farmers, the opportunity to borrow sprayers owned by the extension workers, and to the growing appreciation from direct observation of the difference that correctly sprayed pesticides can make to crop yields. In 1974, however, still only six farmers in the eleven villages, and none of the landlords, were found to own spray equipment.

The majority of farmers still use the traditional implements and have done remarkably well with them on the basis of an intensive application of largely uncosted hand labour. Fieldwork, however, revealed a growing interest in (but, it should also be added, some suspicion of) new mechanical equipment, especially the tractor. As yet its scope and role are only partially understood and for most farmers with small, fragmented holdings and limited financial resources its usefulness is very limited. Those villagers who have invested in a tractor and related equipment view them as an additional source of income and employment to their farm rather

than complementary to it. By leaving their land to the attention of other members of the family they turn machine contractor for much of the year both locally and, with the growing numbers in Olyā competing for a limited amount of work, farther afield in Lorestān (see Cases 4 and 6 in Chapter 7). For the small group of landlords, on the other hand, who grow crops predominantly for commercial marketing, mechanization has been recognised as a labour-saving device and economically advantageous. Yet for them too technical understanding of the potential of a tractor and subsidiary tillage implements is only partial and most machinery is inefficiently used.

Technologically, therefore, Olyā is in a stage of transition. It has been shown that during the last decade there have been signs of an intensification of this process of change in the study area, both by the introduction of new machinery and by the improvement of traditional farm implements. Yet fieldwork in 1973-74 suggested that investment or the intention to invest by the farmer, small or large alike, in cultivation equipment, notably the tractor, has fallen markedly. The major reason for this would seem to be the uncertainty introduced into the study area by the likely location of a farm corporation centred on Sha'bān.

Plate 17 An extension corpsman demonstrating the practice of castration to a group of farmers in Beyān.

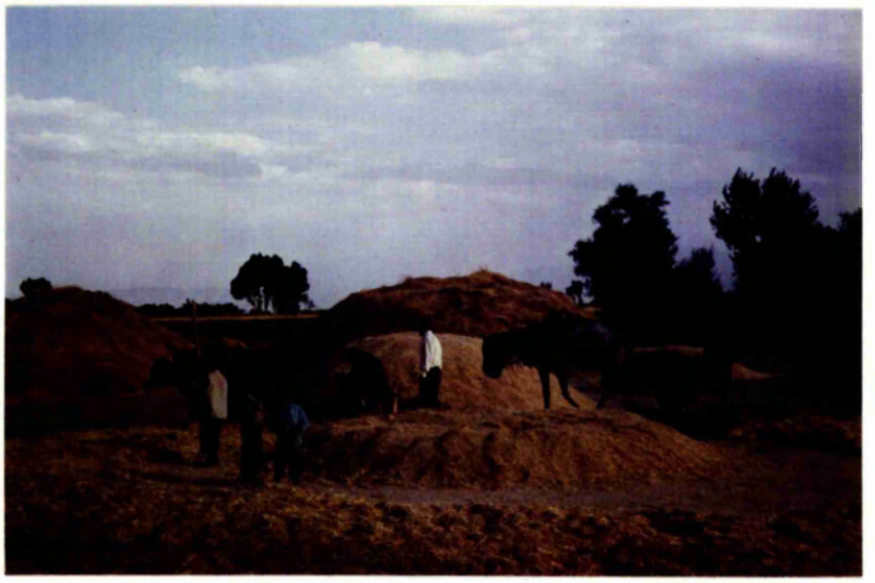


Plate 18 Threshing wheat in the traditional manner in Jahānābād.

5.2.3. CROP AND ANIMAL HUSBANDRY

In this section an examination will be made of changes in the use of methods of husbandry closely connected with raising agricultural production not previously considered: the adoption of new crop varieties, chemical fertilisers, pesticides and animal improvement by vaccination and breeding.

The adoption of new crop varieties was mentioned in Chapter Four. The first significant introduction was of Omid wheat seed from the Hamadān shahrestān in the early sixties. Information on its availability and rate of acceptance by the farmers is scanty but by 1968, when it is mentioned in agricultural extension corps reports to the Hamadān agricultural department, it would seem that the seed was widely used; it required little change in the management methods of the farmer and was, moreover, recognised by him as a "good thing". However, by 1968 much of the seed had lost its hybrid vigour, was "dirty" and was yielding much the same as the local, so-called Tehrāni, seed. In 1970 new seed - in the form of high yielding Omid and Russian varieties - once more became available in Olyā, together with chemical fertiliser (see below), under a government subsidised programme to raise yields (see Chapter 6.2.). Fieldwork found that the majority of farmers in the eleven villages studied were using this new seed, particularly Omid. The Russian seed, though recognised as giving a high yield, is a hard wheat, unsuited to bread-making, and therefore far less popular. Only in Milāb was the local seed still widely used and the reason for this was not clear; certainly the farmers affirmed that their yields matched those elsewhere. What seems to have happened is that the new seed has again lost its initial vigour. The reasons are not hard to find. There is first the custom of saving part of the crop for next year's seed which unavoidably leads to deterioration and

contamination[1]. Secondly, there is not a sufficient quantity of seed available to enable farmers to regularly plant a tested, high standard variety. Moreover, in 1973-74 it was clear that the large land-owners in the shahrestān, whether former landlords or the two state farm corporations, were being given preference, thus exacerbating the shortage for the small village farmers. Finally, it seems likely that the quality of the Omid seed in 1970, by the time it reached the farmers, was over-emphasized, for the present serious problem of wild oats in the wheat seems to have originated from that seed.

Since 1971 new varieties of barley, alfalfa and sugar beet have also become available through various government programmes. Similarly, imported Lebanese varieties of apples from the main Irānian nurseries at Karaj and Rezā'iyyeh are extensively grown in the study area. Perhaps the most remarkable example of the recognition by the farmers of the difference in seed varieties has been the use of Dutch gladioli bulbs in Sha'bān (see Chapter 4.2.). It may be concluded that there is little doubt of the farmers' willingness to adopt new crop varieties, but that all too often good seed is not available or hard to come by.

Closely connected with the successful adoption of new crop varieties and with the aim of increasing agricultural production is the maintenance of an adequate level of plant nutrients in the soil by the application of natural or artificial fertiliser. It was pointed out in Chapter 2.4. that the soil in the Nahāvand valley is short of nutrients in general and phosphorous in particular. There has always been some recognition by the farmers of the connection between the application of human or animal manure and increased crop yields, especially of grapes and vegetables[2]. But the use of artificial

1. Keen, B.A., pages 68-69 (1946)

2. It should be noted that animal dung was used much less than human manure, because of its value when mixed with straw and mud and formed into a flat brick (tapāleh) as the main household fuel.

fertilisers by a majority of farmers has only come about over the last five years or so, as first fertiliser became more widely available and secondly the farmers began to be convinced from demonstration plots and their own experiments of its usefulness. This process of acceptance was helped in particular by the inclusion of cheap, subsidised fertiliser (and insecticides - see below) in the seed improvement programmes of the Department of Agriculture and Sugar Beet Office (see Table 47). Thus, under the contract to plant beet in 1974, the farmers were given 30 kilos per jarib of

Table 47 Fertiliser prices in Olyā (riāls/kiseh)

Fertiliser	Department of Agriculture		Sugar Beet Office		Village co-operative societies		Nahāvand bāzār	
	1973	1974	1973	1974	1973	1974	1973	1974
Urea	294	-	400	448	420	460	430-450	450-500
Diammonium Phosphate	356	-	500	540	500	550	500-520	600-650
Ammonium Nitrate	n.a.	-	n.a.	262	n.a.	n.a.	250-260	350-375

Source: Fieldwork, 1973-74

Note: n.a. Fertiliser unobtainable
- Not available until autumn 1974 (after the completion of fieldwork)

1 kiseh = 50 kilos

each of the three main fertilisers (urea, ammonium nitrate and diammonium phosphate) at reduced prices, and instructions as to its best time and method of application. For example, it was suggested that phosphate be put on the land in autumn to give it time to break down over winter before the beets were planted. Similarly the Department of Agriculture encouraged the farmers to use urea and diammonium phosphate in the following quantities:

	Urea	Diammonium phosphate
	(kilos/hectare)	
Wheat	110	100
Barley	50	75
Clover & Alfalfa	-	200

It should be stressed that the availability of new seed, subsidised fertiliser and insecticide depended on an annual contract with the Department of Agriculture that was not automatically renewable. Indeed, in the case of wheat, this has meant only a single opportunity for most villages due to the great demand and shortage of supplies. In the case of beet, however, supplies are readily available and it was pointed out in Chapter 4.2. that the planted area is steadily expanding.

Some abuse of this programme of new crop varieties and subsidised fertiliser by the farmers was found. They would, for example, try to contract with the Sugar Beet Office to plant more land than they owned in an effort to obtain extra, cheap fertiliser which could then be used for other crops or even sold for profit. Nevertheless, these schemes have at least had the effect of giving the farmers access to fertiliser and the opportunity to learn of its effects by practice.

In 1974 chemical fertiliser was used on most crops, though human and animal manure was still preferred for certain crops, notably grapes. The general quantities of chemical fertiliser applied by the farmers to different crops were as follows:

	Urea	Diammonium Phosphate	Ammonium Nitrate
	(kilos per jarib)		
Wheat	15	20	-
Beans	-	20	-
Clover	20	20	-
Sugar beet	30	30	30
Grapes	-	-	-
Fruit trees	A little	-	-

All but one of the 51 farmers sampled had purchased fertiliser in 1973-74 (see Table 48). However, conversation with these farmers revealed that on the whole it is applied rather blindly. There is, therefore, the danger that unless the farmers are made aware of the importance of its optimum use incorrect applications may lead to disillusionment. On several occasions farmers were encountered who were inclined to doubt the value of the "scientific" approach as a whole. The moral would seem to be that any advice given must be overseen in its application and thoroughly understood by the farmer in order to prevent any failure due to misuse of that advice (see Chapter 6.2.).

Another major problem which the farmer has to face is that of plant pests and disease carried by parasites, such as black smut. Yield losses from these factors could not be accurately measured, but fieldwork observation would suggest that they are considerable[1]. The main pests and diseases are as follows:

1. CENTO. "Report of the panel on pesticides and pest in Irān, Pakistan and Turkey", Ankara (1971). This report suggested that losses from plant pests in Irān averaged more than 25% annually.

Table 48 Quantity of fertiliser purchased by the sampled farmers in the crop year 1973-74 (kiseh)

	U.	D.P.	A.N.		U.	D.P.	A.N.
1.	-	10	12	27.	4	-	-
2.	5	3	3	28.	-	6	-
3.	4	7	6	29.	-	2	4
4.	1	12	-	30.	3	6	3
5.	-	2	3	31.	2	3	3
?6.				32.	-	4	-
7.	-	6	-	33.	3	7	5
8.	3	6	-	34.	-	-	-
9.	2	13	-	35.	5	-	-
10.	-	10	-	36.	2	-	-
11.	-	10	10	37.	15	15	-
12.	-	7	-	38.	-	18	-
13.	2	10	2	39.	-	5	-
14.	-	40	-	40.	4	7	-
15.	5	50	-	?41.			
16.	1	-	2	42.	2	-	2
17.	4	12	-	43.	4	6	-
18.	-	17	-	44.	-	2	2
19.	8	18	-	45.	6	6	-
20.	1	6	1	46.	-	-	6
21.	1	2	2	?47.			
22.	1	2	-	48.	-	3	3
23.	-	14	-	49.	2	6	4
24.	5	5	-	50.	4	6	6
25.	3	3	-	51.	10	7	-
26.	6	5	4		118	379	83

SOURCE: Fieldwork, questionnaire survey, 1973-74

NOTE: U. - Urea

D.P. - Diammonium phosphate

A.N. - Ammonium nitrate

? - not recorded

Pests	Aphids	-	beans, fruit trees
	Crown borer	-	sugar beet
	Brown elm leaf beetle	-	tabrizi
	Leaf-roller	-	fruit trees
	Mites	-	beans
	Leaf hopper	-	sugar beet, beans
	Shot hole borer	-	fruit trees
Diseases	White mildew	-	grapes
	Black smut	-	wheat

(NOTE: In the early spring and dry summer of 1973 aphids were particularly rife.)

The adoption by the farmers of various types of insecticides to deal with this problem originated, as with fertiliser, from their inclusion in the wheat and sugar beet improvement programmes. Thus, for every hectare of beet planted on contract one litre of Dimegosol spray was given to the farmer at a subsidised rate, together with a back-pack sprayer on loan (one for every six hectares) and instructions as to their correct use. Similarly, for wheat and barley, Sarrason and Tretizon insecticides were given to the farmers free of charge. But, as mentioned earlier, only in the case of beet has supervised provision of insecticides been continually available.

Fieldwork revealed that, although the majority of farmers had used an insecticide at some time over the last few years, much the same conclusions that were drawn for fertiliser are again relevant. The use of insecticides is still very much in its infancy and only six farmers out of the total population of the eleven villages owned sprayers (see section 5.2.2.). Nevertheless, widespread recognition of the value of insecticides to increase crop yields is present amongst the farmers and it would be a pity

if the ground that has been made so far should be lost for lack of supporting services in the form of extension work (see Chapter 6.2.).

Three other problems concerning crop husbandry may also be briefly mentioned. First, weeds continue to be dealt with in the absence of herbicides by ploughing and hoeing. Secondly, mice were found to be a serious nuisance by consuming newly planted wheat seed in autumn before it had germinated. Some effort was made by the extension workers in Olyā from 1970-1973 to persuade farmers to coat their seed in a poison solution before planting, but this has since been discontinued by the majority who are wary of such practices affecting their own health. Finally, a major recurring problem has been the damage done to young fruit trees by scavenging hares in the winter months. The trees reach above the level of snow when all normal food sources are covered and their still soft trunks are bitten. The farmers have adopted the practice of binding cloth or plastic sacking round the trunks of all trees up to the age of three years for protection during the cold season.

Just as there have been changes in crop husbandry so livestock husbandry has also felt the impact of technological innovations. Reference has already been made to the general inadequacy of housing of animals, especially of sheep and goats in the winter months (see section 5.2.1.), and to improvements in the provision of feed, notably the expanding area under alfalfa and clover (see Chapter 4.2.). Although it was not possible during fieldwork to gather reliable data as to the timing and extent of other changes, even for the sample of farmers, several important developments were observed. For example, farmers were showing widespread interest in the cure and prevention of diseases amongst their animals by vaccination. This has been encouraged since the late sixties by the Department of Agriculture which provides free

vaccination services to combat such major diseases as foot-and-mouth amongst cattle, Newcastle disease amongst hens and enterotoxaemia amongst sheep and goats (see Chapter 6.2.) and centres to which sick animals can be brought for diagnosis and advice on treatment. In addition several farmers have learnt to vaccinate their own animals, and for those with large numbers of sheep or hens this is particularly important. The use of Nilverm powder to counteract lung-worm and stomach-worm in sheep has also increased since it became available in the Nahāvand bāzār in 1972. Finally some attention should be drawn to signs of interest by the farmers in up-grading their animals following the introduction of a young Holstein bull into Kuhāni village by the extension service in late-1973 to service the local cows (see Chapter 6.2.). Similarly, farmers are being more selective in their choice of bees and chicks for fattening, which are now generally bought in Tehrān.

On the whole, therefore, it would seem that mental resistance to change is not as great in the livestock sector as in the crop sector, perhaps because losses through disease are generally more catastrophic in their impact on individual farmers. Moreover, results are more obvious and immediate.

Farm practices in the study area have thus changed considerably in recent years. The farmers in general have shown themselves able and willing to introduce new equipment, to adopt improved methods of husbandry and to take advantage of government assistance. In addition, a small number of farmers have begun to specialize in certain practices, such as rearing poultry for meat, bee-keeping, the cultivation of fruit trees or flowers, and the hiring out of their tractors. This progress, which, given the opportunity,

shows every sign of continuing, must now be translated into a scientific idiom and the application of "rules of thumb" replaced by a basic understanding of the processes involved.

5.3. THE FARM ECONOMY

It is the purpose of this section to examine the effect of change on the prosperity of the rural peoples of Olyā. Data was collected during fieldwork on income from agricultural land, other income, on credit and debt and on more general economic aspects indicative of relative prosperity such as marketing, wages and savings (see Appendix 1). This data was difficult to come by, partly because of the tendency of the farmers to avoid answering questions on income and related matters, or to under-declare, partly because it was not easy to fit complex answers into neat answer frames, and thus complete reliability cannot be placed on it. For a more detailed examination of the information collected reference should be made to the case studies in Chapter 7.

Unfortunately little comparative data is available. Perhaps the most useful surveys so far made have been those conducted by the Research Centre of the Ministry of Co-operation and Rural Affairs which concern the financial position of farmer members of rural co-operatives. However, these surveys do not as yet include co-operatives in the Nahāvand area.

5.3.1. THE GROWTH OF INCOME

All the farmers questionned in Olyā agreed that their money income, whether from the sale of crops, animals, dairy produce, carpets or from other sources, had increased considerably over the past few years. In the absence of reliable figures for previous years this growth cannot be accurately shown. However, an attempt was made during fieldwork in the summer of 1974 to gather data on income from these various sources for the sample of farmers for the Irānian year 1352 (March 21st, 1973, to March 20th, 1974).

First, the volume and value of crops sold will be considered. It was found that beans were by far the most important cash crop and were marketed by 45 (88%) of the 51 farmers (see Table 49). The high market price of beans, about 20 riāls per kilo, and reliable, high average yields of 1½ tons per hectare ensured a good return for the farmer. Seven farmers were each recorded as earning over 40,000 riāls from beans in 1352. As was pointed out in Chapter 4.2., beans have been the main cash crop in Olyā since the late fifties and wheat the main subsistence crop. Yet wheat, too, has always been sold or bartered when over and above the annual requirements of the household. Fieldwork showed wheat to be the second most important cash crop, marketed by eighteen of the 46 farmers who planted it. It should be noted that it was generally only marketed by the larger farmers, who had a greater opportunity to produce a disposable surplus.

Sugar beet and gladioli flowers, unlike wheat, were grown entirely as cash crops. The former, grown under contract, had to be sold to the Borujerd sugar factory. Gladioli are noteworthy as offering an income per jarib which compared favourably with opium - about 30,000 riāls - and were of particular significance in the village of Sha'bān where landholdings were generally small[1].

The remaining crops - barley, apricots, cucumbers (each sold by only one farmer in the sample), grapes (by 3), chickpeas (by 5), tomatoes (by 7), potatoes (by 11), clover (by 13) and straw (by 14) - were grown both as cash and subsistence crops. Of these, clover was of the greatest monetary importance, rivalling beet as the third major cash crop. Attention should also be drawn to the value of vegetables, for they have been increasing in significance in

1. Opium was an important cash crop from 1970-1972 inclusive (see Chapter 4.2.).

Table 49 Gross income of sampled farmers from agricultural land, 1973(1352)

Village & farmer		Farm size (ha.)	Beans	Wheat	Sugar beet	Clover	Straw	Potatoes	Other	Total income (rials)
Gol-e Zard	1.	3.4	600 (12000)	600 (4400)	15 (18000)				T.,G. (11800)	46,200
	2.	1.6	200 (4000)						T. (2000)	6,000
Raziābād	3.	1.7	1200 (22000)					150 (750)	T. (5000)	27,750
Kuhāni	4.	5.4	2400 (44000)	900 (5000)			2400 (4800)			53,800 ÷ 2
	5.	0.6	900 (18000)							18,000
	6.	0.2	300 (6000)	900 (5100)			1800 (3000)			14,100
	7.	1.5	1050 (21000)			1800 (13500)	900 (1000)		Ap. (5000)	40,500
	8.	2.4	1500 (30000)				900 (1500)			31,500
	9.	3.9	3000 (60000)	2400 (15200)			2100 (2100)	1200 (5200)		82,500
	10.	2.8	2400 (48000)	1200 (8000)			1500 (3000)			59,000
	11.	8.0	1800 (54000)				?		C. (15000)	69,000? ÷ 4
Jahānābād	12.	1.5	300 (6000)			?	900 (900)			6,900?
	13.	2.6	1800 (36000)	3000 (22000)		600 (3000)	1800 (4200)	2400 (8000)		73,200
	14.	8.1	6000 (116000)	6000 (42000)	10 (25000)	900 (4000)	4500 (4500)	1200 (4000)	Cu.,C. (18000)	213,500 ÷ 4
	15.	11.8	3000 (58000)	6000 (43200)	$2\frac{1}{2}$ (3000)				C. (24000)	128,200 ÷ 2
	16.	0.5	600 (12000)							12,000
	17.	2.7	1500 (30000)	3000 (21000)			1800 (4800)			55,800
Bābā Rostam	18.	3.2		2400 (19200)			600 (1000)			20,200?
	19.	5.9	600 (11200)		15 (18000)				C. (16800)	46,000
	20.	1.6	600 (12000)							12,000
	21.	2.4					600 (1000)		C. (5500)	6,500?
Fiāzemān	22.	1.7	900 (18000)							18,000
	23.	6.0	1200 (20800)	900 (5400)						26,200? ÷ 3
Sha'bān	24.	2.0	300 (6600)					600 (3600)	T. (900)	11,100
	25.	0.8	1200 (24000)							24,000
	26.	0.3	900 (15000)		18 (21600)				T. (2400)	39,000
	27.	0.6	300 (6000)			900 (5000)				11,000

(continued on next page)

(Table 49 continued)

Village & farmer		Farm size (ha.)	Beans	Wheat	Sugar beet	Clover	Straw	Potatoes	Other	Total income (rials)
	28.	2.8	900 (18000)	1800 (10200)	5 (6000)					34,200
	29.	0.9								-
	30.	1.5	450 (9000)						Glad. (17000)	26,000
	31.	0.6	600 (12000)		12 (14400)					26,400
	32.	1.0				?		1200 (4000)		4,000?
	33.	2.6	900 (18000)	600 (3600)	12 (14400)					36,000
Qal'eh-e Qobad	34.	1.1	600 (10000)			900 (6000)		?	G. (1500)	17,500?
	35.	3.7	900 (15000)				?	1200 (6000)		21,000?
	36.	7.0	2700 (54000)	1500 (9000)		6000 (46000)	4800 (4800)		G. (20000)	133,800
	37.	15.4	600 (12000)			1200 (8000)	1200 (1000)			21,000?
Beyan	38.	6.0	?	3000 (21,000)						21,000?
	39.	1.4	300 (6000)							6,000
	40.	1.8	1200 (36000)							36,000
	41.	2.2								-?
	42.	2.4								-
	43.	1.6	600 (12000)	900 (7000)		1500 (15000)				34,000
Baba Qasem	44.	1.0	450 (8250)			900 (4500)		900 (3300)		16,050
	45.	3.8	1200 (24000)	2100 (14700)			?		B. (10000)	48,700
	46.	1.3	300 (4500)			300 (2000)		450 (2200)		8,700
	47.	0.8	300 (6000)							6,000
	48.	2.4	1200 (24000)			1200 (8000)		1500 (7500)	T. (1000)	40,500
Milab	49.	3.4	900 (15000)							15,000?
	50.	3.4	900 (18000)							18,000?
	51.	3.3	300 (6000)	600 (3800)						9,800?

Note: 600 - volume of crop in kilos (tons for sugar beet)
(12000) - income from crop in rials
÷ 4 - income divided into four shares
? - of uncertain accuracy

T. - Tomatoes
G. - Grapes
Ap. - Apricots
C. - Chick-peas
Glad. - Gladioli
B. - Barley
Cu. - Cucumber

Source: Fieldwork, questionnaire survey, 1974

recent years. Similarly, in the next few years fruit sales should further improve the income levels of farmers for since about 1970 over a third of the farmers in the sample have invested in apple, peach and plum trees, but no return has yet been received.

Although some reservation must be expressed as to the reliability of the above data, it was found even more difficult to collect reliable data on income from sources other than land, and for the most part the account must be purely qualitative (see Table 50). The sources of subsidiary income that should first be mentioned are those most closely connected with the farmers' own holdings: namely, income derived from such occupations as dairying, poultry-keeping and sheep-fattening. Their growing importance to the annual income of farmers in the study area was discussed in the previous section.

The majority of households also supplemented their incomes by the sale of home-made carpets. In 41 (80%) of the sampled households looms were being worked and 34 had sold at least one carpet in 1973 (1352). Carpets were sold directly to a merchant in Nahāvand city or to a visiting "collector" and the customary $2\frac{1}{2}$ square metre size fetched between 10,000 - 14,000 riāls depending on its quality. (In the summer of 1974 (1353) the price rose to between 12,000 - 16,000 riāls or almost double the 1970 price). In most households the women, especially the younger ones, were found to make carpets for much of the winter and at least part of the summer months. The villagers said that it was possible for two girls working "full-time" to produce one $2\frac{1}{2}$ square metre carpet per month, but the normal household output was about two to three a year, for the women also had other jobs to do in the household. Carpets could therefore make an important contribution to income levels and yet did not require a high initial monetary

Table 50 Gross income from sources other than land in 1973 (1352) (rials)

Village & farmer	Sheep - no. sold	Dairy produce per week	Carpets (no. sold)	Labouring locally	Winter work away from village	Other
Gol-e Zard 1.		300		x (share-cropping)		
2.		150	10,000 (1)			Share in flour mill, about 20,000 rials.
Raziabad 3.	21	750	x (2)			
Kuhani 4.	25	200 (in winter)	14,000 (1)			
5.	5	x	40,000 (4)	x		
6.			11,500 (1)			Son's remittances
7.			x (1)	x (share-cropping)		
8.			13,000 (1)			
9.		200 (in winter)	34,000 (2)			
10.		400 (in winter)	34,000 (2)			
11.	25		x (3)			
Jahanabad 12.					3 months in Tehran	
13.	10		30,000 (2)			
14.			x			Share in village shop, rents out land in city.
15.			x (2)			Landlord's representative, receives 10% of harvest.
16.	15	200	25,000 (2)			Works for landlord
17.	6		40,500 (3)			
Baba Rostam 18.		x				Son's remittances
19.	15					Son's remittances
20.		x				Tractor income
21.		100 (in summer)		x (construction)		
Fiazeman 22.						Son's remittances
23.	150	x				Tractor income
Sha'ban 24.		300				
25.	5	x	x (1)			Tractor income

(continued on next page)

(Table 50 continued)

Village & farmer		Sheep - no. sold	Dairy produce per week	Carpets (no. sold)	Labouring locally	Winter work away from village	Other
Sha'bān	26.	50				x	
	27.						Tractor income
	28.					x	
	29.	18		10,000 (1)			
	30.			x			
	31.		250 (in winter)	18,000 (1)	x		
	32.						NIOC pension of 4,000 rials per month, and
	33.	30		12,000 (1)			son's remittances
Qal'eh-e Qobād	34.	18		22,000 (2)			
	35.		300	36,000 (3)			Shop income, honey sales of 24,000 rials
	36.	43					
	37.	60		x (3)			Tabrizi sale
Beyān	38.	17		x			Landlord's representative
	39.	3		x (1)	x (share-cropping)	x	
	40.	10		40,000 (4)			
	41.						Sons' remittances
	42.					x	
	43.	20		x			Half share in village shop
Bābā Qāsem	44.	9		11,000 (1)			Son's remittances
	45.	14	x	x			
	46.	5		25,000 (3)	x (construction)	x	
	47.	10		x			
	48.	15		x			Son's remittances
Milāb	49.	10		x			Son's remittances
	50.	6					
	51.	15		x		x (200 rials per day)	

Source: Fieldwork, questionnaire survey, 1974

Note: x - income uncertain

investment, for the wool and wooden frame of the loom were both produced on the farm itself. In all the households visited during fieldwork there were carpets on the floor of at least the main living room (as distinct from the work room), and many households had above ten carpets, some of which were rolled up in a corner of the room ready for sale. The farmers questionned were generally found to view carpet production as a useful safeguard against indebtedness during times of difficulties or as a method of accumulating reserves in preparation for a major investment. For example, Aminollāh 'Ali Bakhshi of Gol-e Zard had sold his six carpets in 1972 (1351) to pay for part of the cost of his new house, and many farmers reported the sale of carpets to pay for medical expenses.

In addition, farmers' incomes were to some extent supplemented by other employment, whether in kind from working another person's land on a crop-sharing agreement or in cash by labouring locally or, very often, from work away from the village in the winter months (as described in section 5.1.). One farmer in the sample had a half-share in a flour mill at Gol-e Zard, three had shops, four owned tractors, two were the landlord's representatives; one farmer in Sha'bān received a pension from the National Irānian Oil Company, and several received remittances from sons working away from the village.

The farmers all agreed that their economic position was better than in the past. By introducing new farm practices yields have increased all-round, permitting a greater marketable surplus to be produced. Moreover, the farmers were much more aware of price and market conditions, both locally and nationally, and responsive to changes in them. Thus, cultivation of specialised, high-value produce such as sugar beet, vegetables, fruit and flowers, which

offered a greater return than wheat or pulses, had increased. But more than this, the farmer has shown himself to be aware of the limitations of his farm, due to its small size, for increasing his income, and to be willing to make up for this by increasing his income from alternative sources.

Growth of income was also apparent amongst both the "landless" and the landlord classes. The former were, for example, more fully employed, especially in jobs away from Olyā. Locally, too, daily wages for labourers both in agriculture and in construction work have doubled since 1969 (see Table 51). The landlords too, despite their loss of land at land reform, have increased their personal wealth. They were unwilling to disclose their sources and levels of income, but it was clear from their large new cars and increasing travel abroad for education or holidays that this was the case.

Table 51 Approximate average daily wages for agricultural labourers in Olyā (riāls)

	1969 (1348)	1970 (1349)	1971 (1350)	1972 (1351)	1973 (1352)	1974 (1353)
Men	70	80	110	120	130	140
Women	50	60	75	90	90	100
Boys	40	50	70	80		

Note: 1. Labourers also receive a midday meal.
2. Men's wages reached a maximum of 200-300 riāls per day in 1974 at harvesting time.
3. Some men are employed on a permanent basis as, for example, a gardener and generally receive about 5,000 riāls a month as payment (and/or a share in the crop).
4. The Irrigation Department paid only 120 riāls per day to men cleaning the Sha'bān canal in early spring 1974. Thus, wages rise and fall according to supply and demand.

Source: Fieldwork, 1973-74

5.3.2. THE GROWTH OF INDEBTEDNESS[1]

The introduction of improved seed, fertiliser, new crops and cultivation equipment, which has resulted in the rise in the smallholder's level of income in Olyā, has only been made possible by borrowing money to finance these innovations, for few smallholders had any financial savings to draw on. The major sources of credit may be divided into two groups: institutional, which include the village co-operative societies, the Agricultural Bank in Nahāvand, other banks and the sugar beet office, and non-institutional, which include village and city shops, merchants and other money-lenders. They will be discussed more fully in Chapter 6.5.. For the moment attention will be focussed on the use made of these sources by the 51 farmers questionned by 1st Farvardin, 1353 (21st March 1974).

Loans from the village co-operative societies and the Agricultural Bank were recorded in some detail (see Table 52). The former had granted loans to 50 farmers[2], averaging 11,500 riāls per farmer. Only nine had received the maximum loan allowed of 20,000 riāls. The loans were used mainly for current expenses, such as the purchase of fertiliser and improved seed, and repayment was timed for the end of the harvest. 27 farmers also held loans from the Agricultural Bank, generally for such capital requirements as the replacement of livestock or to meet house-building costs. These loans were repayable after three years and carried the same

1. For a general analysis of the problem of indebtedness in rural Irān before land reform see Lambton, A.K.S., Chapter xxii (1953)
2. One farmer in the sample, who was not a member of a co-operative society, did not receive a loan.

Table 52 Institutional sources of loans to the sample of 51 farmers, spring 1974 (1353) (riāls)

Village & farmer		Village co-operative	Agricultural Bank	Village & farmer		Village co-op	Agricultural Bank
Gol-e Zard	1.	20,000	30,000	Sha'bān	29.	5,000	30,000
	2.	20,000	60,000		30.	10,000	18,000
Raziābād	3.	15,000			31.	4,000	
Kuhāni	4.	10,000	60,000		32.	10,000	
	5.	7,000			33.	5,000	30,000
	6.	6,000		Qal'eh-e Qobād	34.	20,000	25,000
	7.	10,000			35.	20,000	35,000
	8.	15,000			36.	10,000	
	9.	20,000	8,000		37.	10,000	
	10.	15,000	30,000	Beyān	38.	12,000	18,000
	11.	10,000	40,000		39.	8,000	
Jahānābād	12.	13,000	12,000		40.	12,000	16,000
	13.	12,000			41.	10,000	10,000
	14.	19,000	40,000		42.	7,000	
	15.	20,000			43.	5,000	
	16.	5,000	14,000	Bābā Qāsem	44.	8,000	16,000
	17.	20,000			45.	10,000	15,000
Bābā Rostam	18.	7,000			46.	7,000	
	19.	13,000	30,000		47.	11,000	
	20.				48.	20,000	
	21.	10,000	24,000	Milāb	49.	10,000	20,000
Fiāzemān	22.	10,000			50.	10,000	15,000
	23.	11,000	50,000		51.	8,000	
Sha'bān	24.	7,000	18,000				
	25.	15,000	20,000				
	26.	20,000					
	27.	10,000					
	28.	3,000					

Source: Fieldwork, questionnaire survey, 1974

6% interest rate as co-operative loans[1]. In addition, advances were received by 12 farmers from the sugar beet department for the purchase of seed, fertiliser and insecticide for the cultivation of beet on contract, the amount received being deducted (without interest) from the value of the crop after harvesting. Finally other banks, such as Bānk-eMelli and Bānk-eSāderāt, had granted loans to several farmers, though the amounts of these loans were not disclosed.

It was found very difficult to assess reliably the extent of the use of non-institutional credit, for the small-holders were unwilling to discuss it in detail. However, all stated that they bought considerable quantities of foodstuffs and household goods on credit from shopkeepers in the village and in Nahāvand city, for which they paid in cash or the equivalent amount of grain or pulses after the harvest, that is, when prices were at their lowest and the amount of grain required to pay off the debt was therefore considerably greater than it would have been at the time the loan was contracted. Thus, in effect the villager paid a high rate of interest. Several BM Volvo tractors were bought by farmers on an instalment basis from a dealer in Malāyer, at an interest rate of about 12% on the outstanding cost. For farm imputs, such as fertiliser, the farmers also relied heavily on non-institutional credit, though they realised this increased its cost; thus, fertiliser cost 20% more in the bāzār if payment was delayed till harvest-time. It was generally agreed that about 50% of the total loans were from non-institutional sources, and that only by taking these loans could sufficient money be raised to meet farm and household expenditures. Such loans, moreover, were easier to negotiate for there was far less "red-tape" attached to them than

1. The co-operative interest rate was reduced to 5% in the summer of 1974.

to institutional loans.

The above figures of the volume and sources of loans to small-holders in Olyā can be compared with figures published by the Central Organisation for Rural Co-operation for various regions of Irān for 1968 (see Table 53). This comparison serves to justify

Table 53 Volume and sources of loans to small-holders in various regions of Irān, 1968 (1347)

	Average loan per family (riāls)	Co-operative	Agricultural Bank	Other banks	Land-owner	Money-lender
		% from				
Qasr-e Shirin	15,076	43	13	0.5	-	43.5
Sanandaj	12,739	39	18	-	0.6	42.4
Golpayagān	23,156	19	29	9	0.4	42.6
Garmsar	15,474	37	3	1.5	-	58.5
Sāri	19,580	31	6	11	0.9	51.1
Hamadān	13,238	45	4	7	0.1	43.9
Birjand	7,350	41	20	-	0.4	38.6

SOURCE: Central Organisation for Rural Co-operation
See Denman, D.R., page 201 (1973)

NOTE: Some reservation as to the reliability of this data must be expressed.

the conclusion that indebtedness amongst the small-holders in Olyā has grown considerably in recent years. Yet this seems to have been accepted by the small-holders, who regard borrowing as an essential and normal practice. Similarly, by comparing Table 52 with Table 49 it will be clear that credit needs often exceed income from the land. Yet indebtedness would not now seem to be the mill-stone round the neck of the small-holder that it undoubtedly was in

the past, for the income from sources other than his land and reserves in, for example, carpets mean that he can generally manage to meet loan repayments when they fall due. However, it should be emphasized, credit is not particularly effective in promoting capital investment or increased productivity. Credit at low interest rates is in very short supply and the benefits of abundant non-institutional credit are greatly reduced by the harshness of the interest rates attached to it, which may reach 30%.

The general consensus of opinion among the farmers questionned in Olyā was that much more could be achieved by them if a greater volume of institutional credit was made available at the same rate of interest as that offered by the co-operative societies but over a longer period of time[1]. However, they felt that the likelihood of this happening was remote. They also resented the fact that large quantities of cheap government credit were being channelled to the new farm corporations, large private farms and to agri-businesses. Nonetheless, there was an effort by some farmers to mobilize their savings and credit more effectively by joint investment in, for example, a combine harvester in Fīazemān, tractors, two poultry schemes in Sha'bān, a fruit tree programme in Beyān, improving tracks to the fields in Kuhāni and, on a village-wide basis, the construction of a system of piped drinking water in Kuhāni, Jahānābād and Bābā Rostam.

1. The Central Organisation for Rural Co-operation has estimated a figure of 75,000 riāls per farming family as the "typical annual credit need". See Pickett, L., "Co-operatives", in ILO Mission Working Paper No. vii, page 11 (1973)

5.4. FARM, VILLAGE AND THE WORLD OUTSIDE

Consequent upon the improvements in the standard of living, farm practices and economy in the villages under study, the social separation between the villagers and the community outside has narrowed appreciably; there has been an increasing recognition of the need for and value of greater links with the world outside the village, and a breakdown of the close social ties of the villages. These changes, which started before land reform, were undoubtedly accelerated in the sixties by the ending of the subservience of the villagers to the landlord class, by the accompanying social and economic reforms, and by the improvement of communications. The spread of schools, transport, the radio and alternative employment opportunities from the towns have enabled the villagers to sample a more sophisticated way of life and culture and this has produced a dissatisfaction with rural society as it has been.

In the past the villagers knew that as a class they were regarded as low in the social scale by urban opinion; they accepted their position in society fatalistically as immutable. But the expansion and diversification of the Iranian economy have presented the villagers with realisable alternatives to the traditional way of life and amongst many of the younger generation who have had the opportunity of educational and other material facilities fieldwork revealed an eagerness to escape from the ties of the farm and the low social status of the farmer. Even amongst the older generation the former fatalistic acceptance of their lot and links with the land are no longer as firmly entrenched as they used to be; there is now a more or less felt and expressed wish to improve matters affecting their individual circumstances and particularly to ensure their children a better future. In many cases I found that the

younger generation was actively being discouraged by their parents from considering farming as a livelihood and encouraged to work in the city.

The village was traditionally the community-group in Olyā and the focal point for most social interaction. Each village was to a large extent a separate, self-contained community, to which its people were committed by birth or marriage and bound by many ties[1]. This produced a cohesiveness and homogeneity of interest which ensured the sustenance, both material and moral, of its members, though faction between families could still be fierce[2]. Contact with neighbouring towns and cities and with Tehrān was generally limited to infrequent visits, temporary employment or military conscription until buses and improved roads transformed communications especially during the late sixties (see Chapter 6.3.). By 1968, when the road from Nahāvand to Borujerd was asphalted, there were two buses to and from Tehrān each day. The subsequent increase in transport facilities and communications has seen a marked growth in contacts between village and town and a sharp rise in the number of villagers travelling away from Olyā for employment, education, to sell or purchase goods and to visit relations. People look especially to Nahāvand, and to a lesser degree to Borujerd, for social services and entertainment. The majority of farmers questionned had made a pilgrimage to the shrine of the Emām Rezā at Mashhad, whereas ten years ago this journey was the exception rather than the rule. In winter 1973-74 ten villagers from Sha'bān, two from Kuhāni and three from the other villages under study also

1. This is underlined by the very few family names in each village; for example in Kuhāni, Matin and Bahirai predominate; in Fiāzemān, Zafari; and in Bābā Qāsem, Zolfaqāri.
2. See Sunderland, E., in "The Cambridge History of Irān", Vol.1, page 613 (1968)

made the pilgrimage to Mecca.

Economically, too, the degree of contact between the former share-croppers and peasant proprietors and the world outside the village has intensified in recent years, partly out of the necessity of having to perform the tasks formerly undertaken by the landlord, and partly because of the expectation of making themselves a better future from such contact. In the past economic links were generally confined to the sale of small quantities of agricultural produce to Nahāvand city, to the visits of travelling pedlars and barbers, and to the purchase of sheep from neighbouring nomads. Now they include the transport of flowers to Tehrān and sheep to Ahvāz for sale, the purchase of tomato plants from Pol-e Dokhtar for transplantation in the valley and the hiring out of tractors. Contact with government departments, banks and merchants in Nahāvand has also increased[1].

The focus of village life in the past was the mosque[2]. Of the eleven villages under study only Bābā Rostam, Kuhāni and Sha'bān could afford to pay for the permanent presence of a mollā (or ākhund); the other villages would receive a visit from a mollā from Qom, the nearest major religious centre, at the main festivals, for example in Ramazān and Moharram. The mollā was thus an important link with the world outside the village. He combined general advisory duties with his spiritual role. Because the mosque was the major social gathering place, the mollā was in a position to exert considerable influence on village affairs. The picture sketched above has been modified in the last decade or so, in that the mollā has lost stature in political terms and also, amongst the younger generation, in religious terms. The mosque is now regularly

1. McLachlan, K.S., in "Land reform in Irān", page 712 (1968)
2. Spooner, B.J., in "Irān faces the seventies", page 173 (1971b)

attended only by the older generation and the devout and numbers vary with the quality of the mollā. Nevertheless, the community as a whole is conscious of a duty towards the upkeep of the mosque, which is the symbol of the religious persuasion of the village, that is to say Shi'ism. In Beyān and Kuhāni new mosques were under construction in 1973-74 at considerable expense to the villagers, and the mosque has become very much a prestige building for the village.

There have also been changes in the village social structure and at the family level. Social stratification has widened. There are a growing number of non-agriculturalists and increasing specialisation of labour in all the villages studied. In Sha'bān, the largest village, this is particularly marked and small-holders, share-croppers, agricultural labourers, artisans such as the carpenter and blacksmith, officials such as the headman and director of the co-operative, tradesmen such as shopkeepers and merchants, the mollā and extension corps workers may all be found. The professional class is also represented by teachers, a nurse and a visiting doctor. Similarly, the spread of government-supported primary education has produced a young literate group which has an awareness of new possibilities of economic and social life outside farming and outside the village community. It was clear from fieldwork that this group has only just begun to break away in substantial numbers from what it generally sees as the ties of the farm and the low social status of the farmer. In terms of the social pattern of the villagers, this means that there is a very significant distinction to be made between the older generation of farmers proper and the younger generation whose direct attachment to the land is weaker. This weakening is reflected in the departure of the young for employment and an increasing questionning of

traditional principles and values, such as the power of the mollā, the expense of the pilgrimage to Mecca, and the emancipation of women. Nonetheless, it is still true to say that there is a strong sense of village cohesion and loyalty. Traditional practices, such as alms-giving and recognition of the father as the family head, are still continued by the young, whilst the old in turn have, for example, replaced their narrow outlook by a far more outgoing one. In the same way the village layout has itself become less nucleated and defensively clustered, and taken on a more open pattern, especially where new houses have been built, as in Gol-e Zard, Kuhāni and Jahānābād.

The section of the population least affected by change is that composed of women. Despite the increasing emancipation of women in neighbouring towns, they continue to play a limited role in village activities. Their activities outside the home are largely confined to going to the mosque, to the emāmzādeh, shopping and work in the fields; they invariably wear the chādor-e shab in the presence of non-family members. Although they would appear to take a distinctly secondary position in society, married women carry a great deal of influence in their own households and argue home decisions often violently with their husbands. Indeed, I found the level of democracy in the household surprising; the husband controls the farm and his wife runs the household. Carpet-making, milk-processing and related finance are generally her responsibility and she also carries the keys to cupboards. The wife's position is thus not one of subservience, nor one of equality as we would think of it; her role was separate from her husband's, and he would not trespass into it. This dichotomy of roles was reflected in the children - the boys at school, the girls largely considered only for employment in carpet-making. But there are small signs that

this division is changing. For example, an increasing number of girls now attend primary schools, a few of the younger village women work in the Rural Cultural Centres, and there is a growing interest in family planning. It can only be a matter of a few years before what is becoming accepted in nearby cities spreads to rural Olyā.

In conclusion, it may be said that the social transformation of the villages matches the economic changes. Although the farmer's link with the land is still strong, his realisation and expanding knowledge of the world outside the village has spurred him on to improve his standard of living and forced him to alter his attitudes. To many of the younger generation, literacy and the awareness of a different way of life beyond the village have brought a growing dissatisfaction not only with the social regime of the village, but also with the farming on which the community has depended. In the coming years the manner in which this dichotomy of interests between young and old and between farm, village and the world outside is handled will determine to a large degree the success or otherwise of rural development in Olyā. It is therefore hoped that greater attention will be paid to the changing social structures and aspirations of the rural population.

CHAPTER SIX THE SUPPORTING SYSTEM

Closely connected with the changes discussed in the previous chapter are the institutions and services which may conveniently be grouped under the title "the supporting system": namely, rural co-operatives, agricultural extension, communications, the market, credit and other village services. Partly in order to replace the landlord as an institution, partly to introduce some positive social and economic benefits, these services have received considerable official support in Irān's rural areas since land reform. Fieldwork attempted to examine their effectiveness in Olyā, with particular reference to the eleven villages.

6.1. THE RURAL CO-OPERATIVES[1]

The Irānian co-operative movement is of recent origin. It was legally established by the law of 1955, which set up a council to undertake the task of making rules and regulations to govern co-operative societies. By 1960 there were over 600 societies with some 290,000 members, but many had only a nominal existence and the movement as a whole had made little impact on the countryside.

Under the first stage of land reform, as mentioned in Chapter 3, membership of a co-operative society was a condition to the receipt of land. Where societies already existed they were used. Elsewhere new societies, whose membership was confined to share-croppers receiving land under the reform, were established by the land reform officials. Thus, the initiative for the societies came largely from the government. It was intended by those who drafted the law that the co-operative societies should take the

1. For a full account of rural co-operatives in Irān up to 1968, see Lambton, A.K.S. "The Persian land reform, 1962-1966", (1969a)

place of the landowners in villages transferred to the share-croppers, and play a key role in agricultural improvement by fulfilling all or some of the following activites:

1. operations concerned with the production, exchange, storage, transport and sale of the produce of its members;
2. the provision of agricultural implements and machinery, pesticides and fertilisers;
3. the provision of primary necessities, such as foodstuffs, fuel, clothing and household utensils;
4. the purchase of the agricultural produce of the members and its sale;
5. the giving of loans to members;
6. to accept deposits from members; and
7. to obtain credit.

In 1963 the Central Organisation for Rural Co-operation (CORC) was set up by the government as an independent joint stock company to take over the establishment and supervision of rural co-operative societies from the land reform organisation and the Agricultural Bank. Supervision of societies was carried out on a provincial basis. Each province was divided into a number of areas in which the societies were organised into groups of 15-20 under a district supervisor.

Olyā district was one such grouping. The villages had been affected little by the development of co-operative societies in the fifties and few were directly involved in the first stage of land reform. The situation was, however, transformed between 1965 and 1968 by the second stage. The exact sequence of events could not be reconstructed from conversation during fieldwork, but of the eleven villages under study co-operatives were established in Gol-e

Zard, Bābā Rostam, Kuhāni, Sha'bān, Qal'eh-e Qobād, Beyān and Bābā Qāsem, and the villages of Raziābād and Milāb[1] joined the societies of Gol-e Zard and Sefid Khāni respectively, while Fiāzemān and Jahānābād joined Sha'bān. As mentioned before, every share-cropper receiving land became a member of the society. The ultimate decision in affairs of the society lay with the general assembly composed of all members. Day to day administration was in the hands of a small executive committee, appointed by the general assembly by a majority vote for two years. The executive committee appointed a manager from the members of the society to carry out its decisions and those of the general assembly.

All the societies serving the eleven villages were used at first solely for credit purposes. Their capital was small and consisted of the share of capital of members supplemented by a government grant of up to five (later ten) times the capital subscribed by members. This was given through the Agricultural Bank to the societies and carried a 4% interest rate. A co-operative member could receive as a loan from the society five (later ten) times the value of his share capital at an interest rate of 6% (5% in 1974), with an upper limit of 10,000 riāls, which was in 1968 raised to 20,000 riāls (see Chapter 6.5.). Co-operative loans were welcomed by the farmers for the societies demanded a lower interest rate than other lending sources and enabled the purchase of such farm imputs as fertiliser and improved seed which had been used very little before. The farmers questionned unanimously

1. During fieldwork in Milāb the abandoned original office of the co-operative was seen, identified by the plaque on the door. The villagers said it had operated for a short time only before its amalgamation with Sefid Khāni in 1966.

agreed that co-operative loans had also helped to reduce the two linked problems of foreselling of crops and indebtedness. Permission was not granted by the Nahāvand Department of Co-operation and Rural Affairs to consult its records of loans given to the villagers, but it would seem from national average figures released by CORC that loans were generally well below the upper limit (see Table 54). This was because funds meant for CORC were often diverted elsewhere, and the local office could not get the money from Tehrān[1].

Table 54 National average loans per recipient in the rural co-operative societies of Irān (riāls)

1341	1342	1343	1344	1345	1346	1347	1348	1349
2,970	3,330	4,360	4,800	5,400	6,100	6,820	6,820	7,000

SOURCE: CORC and Ministry of Co-operation and Rural Affairs - see Denman, D.R. "The King's Vista", page 204 (1973)

Although knowledge of co-operative principles and practices was certainly lacking amongst the villagers in the study area at the outset, it would seem that the possibility of the establishment of societies was greeted with enthusiasm. For this much praise must be given to the officials from outside the villages who initially started the individual societies and trained village officials to run them, but the members themselves during the latter years of the sixties undoubtedly welcomed the societies, which they saw as the means to establish their social and economic independence. As evidence for this the building of premises by the members may be noted, for the premises, as a visible sign of the existence of a society, gave a great lift to morale. Similarly, the subsequent

1. Lambton, A.K.S., page 310 (1969a)

ability of the societies to increase their activities on broader lines may be noted (see Table 55). The first of these to become widespread was the sale of oil and kerosene as agents of the National Iranian Oil Company, an activity much appreciated by members and non-members, who were beginning to realise the greater convenience of these fuels over traditional ones. Secondly, some of them sold fertilisers, pesticides and improved seed, and a limited range of consumer goods, such as tea, sugar, soap, rice, shoes and other household commodities. These goods were obtained from the federation in Nahavand city and sold at reduced rates. Their availability in the village also removed the need to travel into Nahavand for their purchase.

Professor Lambton visited Nahavand in 1968 whilst examining the co-operatives of Hamadan province. She found that there had been a considerable change in morale compared with 1964, and that there was a much greater confidence amongst the small-holders and an absolute certainty in most cases that conditions were much better than in the past. The following account of conditions in one of the eleven villages under study, Baba Qasem, is taken from her 1968 field notes and, it will be seen, contrasts sharply with the depressed condition of the co-operatives found during fieldwork in 1973-74.

"The co-operative society (of Baba Qasem) had been set up in 1965 and served four villages. Members of the managing committee were drawn from all villages. The society acted for the NIOC as an agent for the sale of kerosene. It also sold some consumer goods from time to time. The manager seemed competent and was enthusiastic. He and his father and grandfather before him had been kadkhodas. He had been to the first congress and was full of enthusiasm for it and for the "revolution".

Table 55 Rural co-operative society activities in the eleven villages under study

Village	Kerosene Sales	Shop	Rural Cultural Centre	Nursery	Radio club	Library	Ambār
Gol-e Zard	x	x					
Raziābād			x	x		x	
Kuhāni	x	x	x	x	x	x	x
Jahānābād			x	x	x	x	
Bābā Rostam	x	x					
Fiāzemān							
Sha'bān		x					
Qal'eh-e Qobād	x	x	x	x[1]		x	
Beyān		x	x	x		x	
Bābā Qāsem	x		x		x		
Milāb							

SOURCE: Fieldwork, 1973-74

NOTE: 1. Opened in 1972, but to-date still unused.

It was alleged that one of the landowners was creating faction and division and putting obstacles in the way of the co-operative. For example, when the members built roads, he was alleged to have destroyed the bridges, and when the federation sent goods to the society for sale, men working for him were afraid to buy. Nevertheless, in spite of these and other difficulties the members said that on no account did they wish to return to former conditions.

The manager had great expectations for the society if it could undertake the sale of consumer goods and marketing. He felt a sense of unity with other societies and even with the international co-operative movement, and was a go-ahead fellow. He thought that the Persian co-operative movement would grow and prosper through the integrity and work of the managing committees and the officials of CORC."

Fieldwork in 1973-74 aimed to examine the effectiveness of the co-operative societies since 1968, but before discussing findings in Olyā it is necessary to review briefly the major changes in government outlook towards co-operatives and agricultural development in Irān as a whole during this period. First, the incorporation of CORC into the newly formed Ministry of Co-operation and Rural Affairs in 1967 subsequently resulted in an increase of government intervention in the societies, as reflected by the ministry beginning to play a greater part in the provision of managerial functions. Professor Lambton considers that before 1967: "One of the reasons why the officials of the Central Organisation for Rural Co-operation were able to win the trust of the peasants was that they were not regarded in the same way as government officials, or

at least not in the same way as the general run of civil servants"[1]. As the intervention of the government manifested itself in an increasing external influence being brought to bear on the running of the societies it is not surprising that the loyalty of the members was soon lost. Secondly, there was mounting evidence that investment in agriculture was being diverted from the land reform and co-operative movements as originally conceived into private ventures and the new centrally controlled farm corporations which had been established under the third stage of land reform in 1968 (see section 3.2.). Finally, the growing demand for managerial skills in the industrial sector of the economy and for trained men in other aspects of public life, which was being actively encouraged by the government, was exacerbating the problem of recruitment of such men to the co-operatives, where conditions of service and opportunity were not as good. Thus, it was clear that the original conception of the societies playing a key role in fostering the growth of an independent small-holder population had lost government support.

The results of these developments in Olyā were not immediately apparent. Indeed, from 1968-1973 the activities of the co-operatives expanded faster than in the period 1965-1968 and took on if anything greater economic and social significance. Sales of oil, kerosene and consumer goods all grew and the co-operatives played an active part in the distribution and sale of improved wheat seed, fertiliser and pesticides to the small-holders. Moreover, the upper limit of credit to members was raised to 20,000 riāls and was in great demand. Between 1969-1972 six of the villages under study also built Rural Cultural Centres (Khāneh-e Farhang-e Rustā'i), using their own labour and materials, but with the financial aid of the federation, which provided the staff and furnishings for the nurseries and the books, sewing machines and family planning facilities that the centres

1. Lambton, A.K.S., page 346 (1969a)

contain (see Table 55). Perhaps the most potentially significant development, however, was the construction of a storage barn (anbār) in Kuhāni in 1971 to enable the collection of pulses by the co-operative for sale to the army. (Similar anbārs were also built in Nahāvand city and in the Soflā sub-district at Barzul and Keriz.)

Nevertheless, by 1973 it was clear that the small-holder members of the co-operative societies no longer regarded them as their own nor felt towards them the loyalty and pride which was found earlier. The sense of unity among members had also disappeared. From the observations of two American Peace Corps voluteers who had worked in Olyā between 1968 and 1973[1], it would seem that the change in attitude of the villagers came before 1970 as they realised that the management of the societies was no longer in their hands but was under the control of government officials in the Nahāvand Department of Co-operation and Rural Affairs. The actions of the village co-operative managers no longer reflected the opinion of the members but were dictated by government officials. Not surprisingly, the considerable enthusiasm and feelings of independence and self-respect which the co-operatives had fostered have been somewhat dissipated.

This is not to say that fieldwork in 1973 found the co-operatives unused, but that they were no longer effective instruments, as originally conceived, for creating a self-reliant rural population. The members now use the co-operative facilities just as they use other institutions, such as the bāzār or banks, whereever and whenever they benefit their own interests. Thus, co-operative loans are taken up in full for they still offer the cheapest short-term source of money (see section 6.5.). But, as was pointed out in

1. See section 6.2.

Chapter 5.3., the co-operatives only partially meet the growing demand for credit as farmers attempt to intensify their activities by introdicing new crops and improved methods of cultivation. Sales of kerosene and oil in the villages also remain buoyant and use of the nursery facilities continues to be popular. However, other social and cultural activities of the Rural Cultural Centres have remained largely dormant, though a useful start to birth control had been made in Kuhāni. Similarly, prices of consumer goods and fertilisers sold by the co-operatives are often higher than those of village shops or the Nahāvand bāzār and their variety far less. Sales have therefore fallen off considerably.

During 1973-1974 two further developments closely connected with the co-operative societies occurred in the Nahāvand shahrestān, which further accentuated the degree of external influence in village affairs. The first was the establishment of the Arān farm corporation and the Nahāvand farm production co-operative west of Olyā which was discussed in Chapter 3.3. The second was the large-scale reduction in the number of societies in autumn 1973 which in Olyā were reduced from about twenty to four. These four societies, which now represent the 70 villages in the sub-district, are all in the study area:

1. 25th Shahrivar society in Bābā Rostam, serving also Raziābād, Gol-e Zard, Amirābād and Moradābād.
2. Arash society in Kuhāni, serving also Borjak, Oshvand, Bān Sareh and Shāterābād.
3. Khayyām society in Sha'bān, serving also Beyān, Qal'eh-e Qobād, Fāzemān, Jahānābād, Tokeh and Gerde Chom. (Chapter 3.3. also mentioned that Sha'bān was designated at this same time a rural township and was to receive special investment in a variety of facilities, such as

new schools, a post office and a cinema, which will serve the surrounding villages. In Nahāvand district four townships were to be set up - Deh Lor and Barzul in the farm corporation and farm production co-operative respectively, and Deh Shahrak (west of Barzul) and Sha'bān. Construction of a sixty bed hospital was started in Sha'bān in summer 1974 (see section 6.6.).

4. Ferdowsi society in Bābā Qāsem, serving also Milāb and Sefid Khāni.

Together they constitute part of the Nahāvand federation, which now includes the sixteen societies remaining in the whole district and has its headquarters at the Department of Co-operation and Rural Affairs in Nahāvand city. The argument behind amalgamation was that by uniting the many small societies into a limited number of large societies the latter would be economically stronger and the work of supervision would be lessened. Fieldwork found that despite the fall in loyalty to the societies, there was still strong opposition to the idea of amalgamation. Great store was originally set by CORC on the members having a close knowledge of each other and amalgamation seemed to mark the final abandonment of the original co-operative ideals. The four remaining societies are no longer easily accessible to members in other villages. Milāb, for example, is over half an hour's walk from Bābā Qāsem. For this reason there is little doubt that the payment and recovery of loans will be more difficult. Professor Lambton argued that the weakness of the former small, scattered societies could best be overcome by strengthening the federations, through which co-operative policy for the different areas could be decided and the

purchase and sale of commodities be made[1]. But the chance to do what she suggested has now gone in Olyā. Even the ambār in Kuhāni, which in fact was used as a point of collection for pulses solely for army purchase on a form of quota system, was closed in spring 1974.

Thus, the co-operative societies, which with their original aims and ideals promised so highly and were welcomed by the small-holders who had to join them, are now looked on disparagingly as yet another arm of the government. The amalgamation of the societies is viewed as merely a transition stage in the more widespread establishment of government-directed farm corporations. At the village level in Olyā it is suggested that this can only be viewed as a retrograde step. Government policy at present shows all the signs of continuing this process of change and the future for the small-holder as an independent producer therefore looks bleak. Co-operation, which is so necessary if greater amounts of capital are to be mobilised and more far-reaching changes undertaken, is once again only being practised between small groups of farmers, often in competition with one another. An air of uncertainty has returned to the villages and it will be a tragedy if this uncertainty is permitted to cloud what has in recent years proved to be a clear example of successful agrarian change.

1. Lambton, A.K.S., "Land reform and rural co-operative societies in Persia", page 153 (1969b)

6.2. AGRICULTURAL EXTENSION

6.2.1. INTRODUCTION

The Iranian Extension Service was launched in 1953 with the active support of the United States technical assistance programme, Point IV[1]. Its aims were to assist farmers to increase their agricultural productivity and rural incomes, and to this end extension offices were established in every province[2]. The difficulties involved in such an undertaking were considerable, for agriculture was under-developed in most areas and the distances to be covered were immense. More important still, there was a shortage of both teachers and teaching materials[3]. Thus, the first need was to train extension agents in agriculture and extension methodology, and an intensive system of in-service training of recruits was developed. However, the speed of recruitment and training was initially slow and by 1960 there were only 241 extension agents operating in the whole country[4]. In the next two years the numbers increased steadily and by 1962 there were 1,200 agents. This increase may be seen as marking the recognition by the Ministry of Agriculture of the value of the Extension Service as an agency for agricultural development. As a result its budget has since been steadily expanded.

In Iran, as in the United States, the key element in introducing new techniques to local farmers was the demonstration plot, a reserved area where a co-operating farmer agreed to try the

1. Baldwin, G.B. "Planning and development in Iran", page 91 (1967)
2. Nichols, A.J. "Development of the Iranian agricultural extension service - a case study", page 38 (1957)
3. Najjar, N. "Agricultural extension", page 4 (1959)
4. Plan Organisation. "Third plan frame: agriculture", (1961)

new methods proposed by the extension agent[1]. The aim was that these plots would "speak for themselves" as the villagers observed and talked about the new seeds, new methods of cultivation, fertiliser applications and -- above all -- the final crop. But it was realised that there were problems to be overcome in applying this theory. One of the main problems was that the majority of extension agents were "foreigners" in the village and neither knew the land and people nor were held in confidence by the villagers. Equally, the social structure of a village clearly played an important role in determining whether or not an agent could enter and go to work, and whether or not the villagers felt it worth their while to undertake the initial risks and added costs which more modern methods involved. This was especially true on landlord-owned land where the landlord might refuse to share the costs but would demand a share in the benefits. A village owned by a landlord suspicious of government agents might be shut tight against extension work. Even where the absentee landlords were sympathetic the communication links between them and their local representatives were often so slow or infrequent that the spread of new information by extension workers could be painfully slow and uncertain. For these reasons, special emphasis was put on "distributed areas"[2] and peasant proprietor villages where the small cultivators could at least be expected to take a certain amount of interest in new methods to improve their lot.

The first decade of agricultural extension in Irān thus witnessed several important achievements. The number of agents working in the villages had increased considerably. They had

1. Baldwin, G.B., page 91-92 (1967)
2. That is, land of the Pahlavi estates distributed during the fifties.

a large number of demonstration plots and had begun to have results in the introduction of improved agricultural practices - the control of pests, fruit tree pruning and propagation, and animal vaccination. In addition, the scope of extension had been widened to include home economics and rural youth work (4-D clubs). The situation was, nevertheless, far from satisfactory. The distance of agents in remote villages from their regional headquarters made supervision and guidance difficult. Moreover, the number of agents was still small in comparison with the 45-60,000 villages in Iran, and the quality of agents, administrative personnel and the facilities at their disposal often left much to be disired[1].

During the Third Plan (1962-68) the extension service was intended to become the primary channel by which information about agricultural programmes and the techniques necessary to implement them would be channelled to farmers[2]. To this end, the number of agents was to be doubled to 2,500 and emphasis laid on training personnel and fitting them for their reponsibilities. However, Baldwin pointed out that plans for such a rate of expansion were highly optimistic because of the high costs involved[3]. The plans for expansion would, for example, have required an increase in the 1961 extension budget of three million dollars to about nine million (Baldwin bases these figures on an average cost of 3-5,000 dollars per annum to train and support one agent including overheads).

In the event these plans were interrupted by the first stage of land reform in 1962, and during the next few years many extension agents were seconded to the land reform organisation and

1. See Gharatchehdaghi, C., page 112 (1967)
2. Plan Organisation, page 195 (1961)
3. Baldwin, page 92 (1967)

diverted from their own work[1]. Yet the value of agricultural extension was not forgotten and the land reform law laid down that extension services should be provided in the villages that were transferred to the share-croppers. To further this end, an Extension and Development Corps was formed in 1964 and was given the task of "raising the living standards of the rural population, promoting their welfare, teaching them modern principles of agriculture for increasing farm and livestock production, developing rural industries, and directing them in the reconstruction and modernization of rural areas."[2] The Extension Corps was modelled on the lines of the Literacy Corps, which had been established in 1963 (see section 6.6.). Veterinarians and graduates of agricultural colleges were exclusively drafted into the corps. All recruits were given a six month training course in extension practice and theory at the Karaj Training Centre and then posted for 18 months. By 1974 there were some 4-5,000 corpsmen actually stationed in the villages and over 1,000 supervisory and administrative personnel[3].

The village corpsmen were required to complete a minimum number of specific tasks during their period of service. These tasks included:

(1) filling up a village questionnaire, with details of population, physical resources and agriculture, so that an operational plan for the village could be drawn up;

(2) setting up at least one experimental field;

(3) teaching improved methods of fruit tree planting and

1. Lambton, A.K.S., page 350 (1969a)

2. Agricultural Extension Service, Ministry of Agriculture. "Extension and development corps of Irān", (1971)

3. Source: Department of Agricultural Extension, Tehrān

pruning;

(4) helping to improve the lighting and ventilation of stables;

(5) vaccinating at least 200 cattle and sheep;

(6) demonstrating the use of pesticides and fertilisers.

The provision of an agricultural extension service, however, is different from the teaching of literacy, for which a limited technique only is necessary. The small-holders, in most cases, are not unskilled in agricultural practices. Many of them, given the means at their disposal, cultivate the land extremely well; and, in any case, have local experience, which is of great importance in agricultural affairs. Consequently, they are not always ready to accept advice from newcomers. A degree of experience and maturity is therefore essential in the extension service, if it is to make a valuable contribution to agricultural improvement[1].

During the period 1970-1974 I visited a large number of extension corpsmen in the villages of the Hamadān and Kermānshāh provinces to assess their impact. On the whole I found their individual performances poor, for they were technically lacking, had little motivation, received a minimum of support or supervision and perhaps of still more importance were regarded with suspicion and distrust by the small-holders. Many corpsmen were also regularly absent from their designated village and most considered farming of low social status. Nonetheless, some corpsmen had succeeded in coming to terms with these problems and in winning the confidence of the small-holders and were assisting them to improve their agricultural productivity (see section 6.2.3.). In particular, they were having considerable success in helping farmers to establish correctly-spaced fruit orchards.

1. Lambton, A.K.S., page 350 (1969a)

A list of the achievements of the extension corps nationally since its establishment in 1964 is given in Table 56 below.

Table 56 Some extension corps achievements, 1964-1972

Model farms: seed improvement	14,880 hectares
Model farms: chemical fertiliser	1,290 hectares
Model fruit orchards	49,120 hectares
Livestock vaccinated	12,013,380
Poultry vaccinated	1,630,720
Livestock treated	1,567,970
Pest control	6,870 hectares
Rodent control	91,570 hectares
Pilot village projects[1]	155

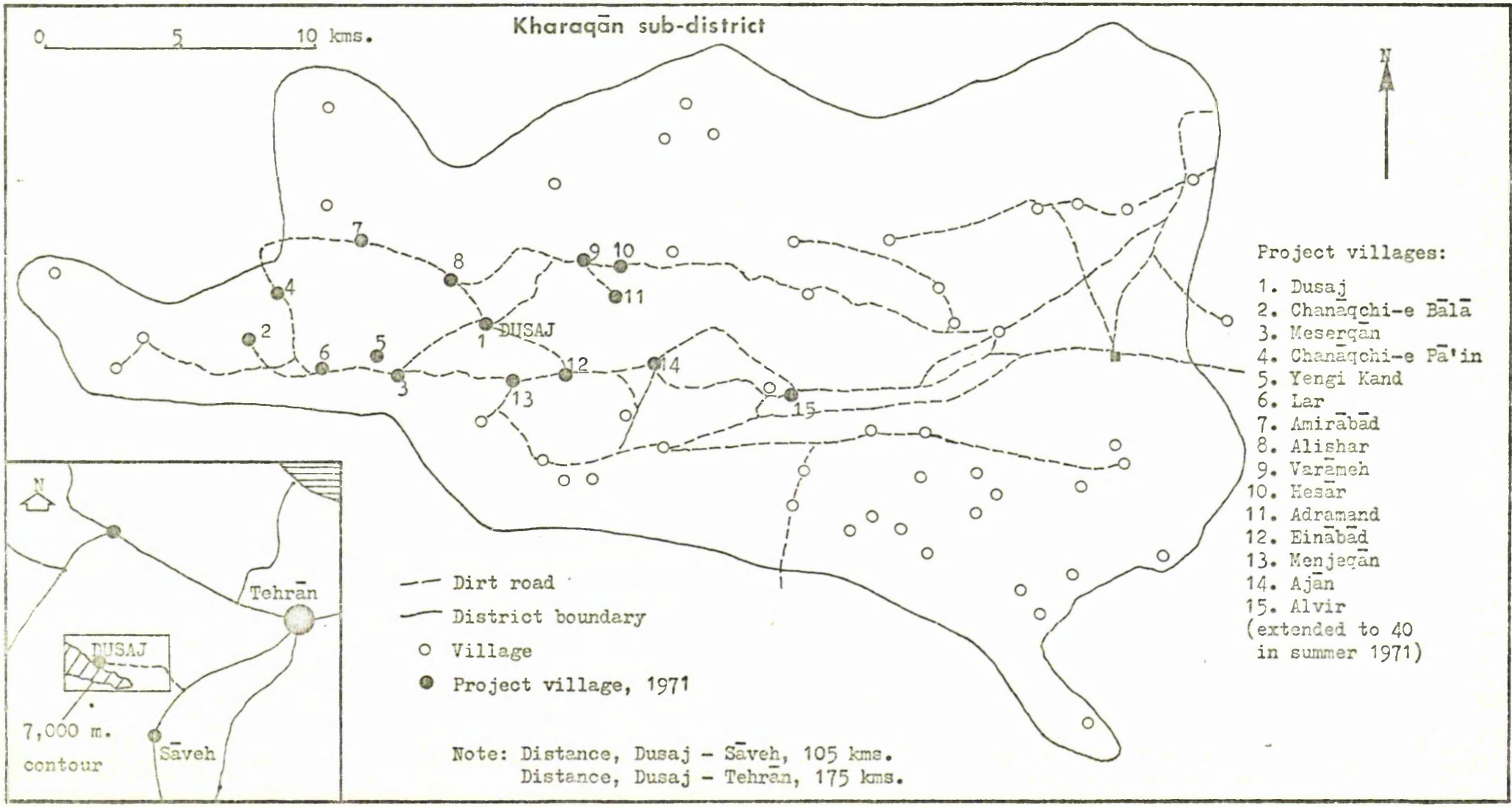
SOURCE: International Communicators Irān. "The revolutionizing of Irān", page 39 (1973)

6.2.2. THE FIRST PILOT VILLAGES PROJECT IN IRĀN - DUSAJ[2]

The first pilot villages project in Irān was established in the Kharaqān sub-district of Sāveh, about 170 kilometres south-west of Tehrān, in 1965. Kharaqān formed part of the area badly damaged by the Qazvin earthquake of September 1962. As a follow-up

1. See sections 6.2.2. and 6.2.3.
2. Much of the information in this section is drawn from reports by Eybergen, M.J., "Pilot villages project on rural development in Irān", (1970), and by other project personnel. Eybergen, a Dutchman, was project manager in Dusaj from 1966-1971.

Figure 24 Project area of the Dusaj pilot villages project



Source: Eybergen (1970); fieldwork (1972)

to relief activities in the area the Iranian government and FAO[1] agreed to undertake a rural development project in several villages with Dusaj as a centre[2]. The project was not only intended to help a number of impoverished rural villages, but was also meant to be a "pilot project", whose results and experiences could be used to advantage in establishing similar rural development projects elsewhere in Iran. The main objectives, according to Eybergen, were:

(1) To raise the standard of living of the population of the villages through the introduction of measures designed to improve agricultural output and living conditions;

(2) To strengthen the agricultural and home economics extension programmes in the villages through suitable training programmes based on a study of the adaptation of extension methods to local conditions;

(3) To promote and strengthen joint action activities in the supply of basic agricultural necessities such as seeds and fertilisers, in the marketing of agricultural products, and in the improvement of land and water resources and social amenities;

(4) To examine the possibilities of establishing or strengthening rural industries and other opportunities of employment for the "landless" class.

1. The project was established under FAO's "Freedom from Hunger Campaign" and was carried out by FAO's Rural Institutions and Services Division in co-operation with the Ministry of Agriculture's Extension Department.

2. Smit , E.H.D. "Dusaj agricultural development project", page 2 (1964)

I visited Dusaj and several neighbouring villages in Kharaqān in 1972 and 1973 to assess the success of agricultural extension. Although Eybergen had suggested in his report that in the period 1965-1968 considerable achievements had been made in all aspects of the project and that the villagers were co-operating in extension work, I found substantial evidence that these achievements had been short-lived. For example, the co-operatives were largely inactive in fields other than credit provision and sales of kerosene and were held in low esteem by their members, the Yengi Kand dam irrigation outlet was broken and no effort was being made to repair it, the piped drinking water system in Dusaj was broken, the roads had deteriorated, and there was an acute shortage of improved seed and fertiliser in all the villages. It should perhaps be added that some lasting improvements had been made, for example in health, through medical treatment and improved hygiene, and in education, but these improvements were largely the result of work done by the Health and Literacy Corps and outside the scope of the project.

In conclusion, a number of reaons why the pilot villages project in Dusaj has not been successful in the long-term may be postulated. First, it would appear that the project was based on the assumption that an injection of capital and infastructure and a crash programme of extension work alone would result in rapid rural development[1]. The necessity to cater closely for the needs and limited aspirations of the people was largely ignored. This lack of regard for the human factor, stressed in the literature on

1. According to A. Saqafi of the Agricultural Extension Department, Tehrān, the Dusaj project had a budget of over 100,000 dollars a year. Eybergen, M.J., recorded the budget of 1965-1968 as 350,000 dollars.

agricultural extension[1], has resulted, as mentioned before, in the failure of many of the objectives of the project. Secondly, little attention was paid to working within the narrow bounds of the supporting services and institutions that were available. Thirdly, the physical resources of the Kharaqān area had very limited potential for agricultural development, in that water for irrigation was in short supply, the cultivable area was restricted by topography and soil depth, the surrounding mountains were eroded and bare of vegetation for grazing, and the climate was harsh. Finally, the project personnel were composed to a large degree of foreigners on contracts of two years or less with FAO and could not hope to win the confidence of the villagers or make a significant contribution to rural development in that period. Moreover, their command of fārsi and the local Torki dialect was weak and prevented communication.

1. See Weitz, R., "From peasant to farmer: a revolutionary strategy for development" (1971), and Virone, L.E., "A practical approach to rural development", pages 39-40 (1969)

6.2.3. THE SECOND PILOT VILLAGES PROJECT - OLYĀ

During the period 1968-1969 the Extension Department resolved to establish a similar project to the one in Dusaj. In this they received considerable support and advice from the Shell-sponsored Technical Assistance Centre at Borgo a Mozzano in Italy, where there had been a highly successful and well publicised programme of technical assistance since 1954[1]. After some consideration the eleven villages in Olyā, which are the subject of this thesis, were chosen and designated Irān's second "pilot project" in 1970[2], with Kuhāni as the official centre.

Before 1970 extension work in Olyā had been limited in scope and largely haphazard in application. During the early years

1. See Virone, L.E. "Borgo a Mozzano. Technical assistance in a rural community in Italy", (1963). It should be noted that in terms of population numbers and area the project in Nahāvand is very similar to that of the commune of Borgo. Of greater importance is the fact that the Borgo project has been used as a training ground for Irānian extension service personnel, whether village agents or supervisors, since 1970 in preparation for the staffing of other pilot village projects. There are now 155 single village projects throughout Irān.
2. In fact, the village of Yāsuj, in the Kuhgiluyeh, was first chosen by the Extension Department as a pilot village in 1969, but after only a few months it was abandoned due to the objections and interference of the local landlord and tribal Khān. He was, for example, attempting to force the small-holders to plant sugar beet for his recently constructed factory in place of rice and other traditional crops.

of the sixties not only were there few extension personnel, but they had to serve the whole district of Nahāvand, and thus contact with the villagers of Olyā was slight and ineffective. Moreover, as mentioned before, they were as much involved with land reform work as with agricultural extension. The first village agent in Olyā was Gudarz Matin, an extension corpsman, who was placed in Beyān in 1967 for one year (see Table 57) and then transferred to his home village of Kuhāni. At the end of 1968 he joined the extension service as a "technician", based in Kuhāni. Another corpsman was also established in Gol-e Zard in 1968 for eighteen months. In addition, a United States' Peace Corps volunteer, John Metz, who was assigned to the Nahāvand Department of Agriculture from 1967-1970, also spent a considerable amount of time in a number of villages in Olyā, especially Fiāzemān, Sha'bān, Beyān and Gol-e Zard[1].

The work of these three young men, who were inexperienced in extension theory and practice, was at first very limited and largely uncoordinated. Yet their achievements are worth noting as they laid the basis for the success of technical assistance in the years since 1970, when the pilot villages project got under way. In particular, as mentioned in Chapter 4.2.2., a number of farmers, especially in Gol-e Zard, agreed to plant fruit orchards on a grid basis for the first time and began to prune their trees. A large number of sheep, cattle and poultry were vaccinated. In Beyān and Sha'bān two chicken projects were initiated with individual farmers, the latter with 1000 birds (see Chapter 5.2.1.); in Kuhāni, with Matin's help as co-ordinator, a piped drinking water system was built; and in Gol-e Zard a bridge suitable for motor vehicles was

1. SOURCE: John Metz's field reports in the Hamadān Extension Office and the Peace Corps Office, Tehrān.

Table 57 Number of agricultural extension corpsmen in the eleven villages, 1967-1974

	1967	1968	1969	1970	1971	1972	1973	1974
Gol-e Zard		1	1					
Razīābād								
Kuhānī		1	1	1	1	1	1	1
Jahānābād								
Bābā Rostam						1	1	
Fīāzemān								
Sha'bān					1	1	1	1
Qal'eh-e Qobād					1	1	1	1
Beyān	1					1	1	1
Bābā Qāsem								
Milāb								

SOURCE: Fieldwork

NOTE: Exclusive of Peace Corps volunteers

constructed over the Sha'bān canal. Finally, demonstration plots of wheat, sugar beet, beans and sunflowers were set up, and the value of the correct use of fertilisers and pesticides was demonstrated.

There were only two extension workers in the pilot villages project when it officially started in autumn 1970: Matin[1] and a new Peace Corps volunteer, Don Lieb[2]. They were based in Kuhāni, where an office and accommodation for Matin and his family were constructed in spring 1971. Two additional corpsmen were placed in the villages of Sha'bān and Qal'eh-e Qobād in 1971 and another two in Bābā Rostam and Beyān in 1972 (see Table 57); they were under Matin's control and thus extension activities could be co-ordinated.

During 1970-1974 emphasis was put on extending assistance to farmers in those activities in which earlier work had been successful and where the farmers were asking for help. First and foremost, a major effort was directed towards increasing the area of fruit orchards, especially of top quality Lebanese red and golden apple trees , whose fruit had a high market value[3]. A considerable stimulus was given to this effort in autumn 1971 by the extension service starting a national scheme whereby the farmer was given one tree free of charge for each tree he bought. The farmers had only to agree toplant the trees at six metre intervals on a grid pattern, with the assistance of the corpsmen. By spacing the larger apple and pear trees in this manner, the farmers could plant peach trees between them at three metre intervals. Peach trees produce a crop

1. Matin completed a one month training course in agricultural extension at Borgo a Mozzano in summer, 1971.
2. Lieb worked in Olyā from August 1970-1973.
3. A mixture of 15% red and 85% golden apple trees was recommended to ensure good pollination and yield.

after only three years, whereas the apple trees take five years to reach maturity. When the latter reach their seventh year they will start to shadow the former, which can be pulled out to allow the further development of the apple trees. The planting of fruit trees was followed by demonstrations of their correct management: pruning, irrigation, application of fertiliser and grafting, and use of the land under the trees for other crops. Although in 1973 the subsidy for fruit trees was reduced to 30% and in 1974 only the costs of organization and transportation of the trees from the Karaj nursery were met by the extension service, the area of orchards increased steadily, as shown in Chapter 4.2.2.

As a second "project", the corpsmen aimed to assist farmers to take maximum advantage of the impact programmes, whether of wheat, barley, clover and alfalfa from the Department of Agriculture or of sugar beet from the Sugar Beet Office (see Chapters 4.2.2. and 5.2.3.). Farmers were given encouragement and assistance to organise their dealings with the relevant departments co-operatively as a village group, and thus reduce much of the time-wasting paper work involved in these negotiations. The extension personnel were also able to advise farmers on correct rates of seeding and fertiliser applications.

Other technical assistance work has included the vaccination and castration of animals, the encouragement of farmers to take their animals for treatment to the veterinary surgeon in Nahāvand, demonstrations of row-cropping and sudan grass, the introduction of box-hives for bees, and advice and help with pest control. The Kuhāni office had a one hundred litre mechanical sprayer and a number of back-pack sprayers and pruning shears under its control which it loaned out to farmers free of charge for specific tasks. An agricultural survey was also started in 1972, following the

example of Borgo a Mozzano, and it was repeated on a systematic basis with my help in 1973 and 1974 (see Appendix1). The most recent project in Olyā was the introduction of a young Holstein bull in 1973. The bull was bought by the extension service and was put into the care of a villager in Kuhāni, under the supervision of Matin. Once the bull has reached maturity, that is at about two years of age, it will be fully utilised to service local heifers and cows and thereby to upgrade stock (see Chapter 5.2.3.).

Despite these achievements, progress has been held back by constraints inherent in the institutional framework in Olyā. The shortcomings of the co-operatives have been discussed above (see Chapters 5.3. and 6.1.). There has also been a lack of co-ordination between the work of the extension service and other departments connected with rural development, which will be discussed in later sections of this chapter. But the extension service is itself open to criticism for failing to recruit sufficient personnel to work in the villages. Thus, in summer 1973, when both Lieb and an extension corpsman left Olyā at the completion of their service, no replacements were found and not surprisingly the volume of extension work fell[1].

In conclusion, I should like to suggest that the pilot village projects of Dusaj and Olyā have highlighted a number of important principles for extension workers[2]:

(1) Extension is not a form of charity and the extension worker must never be guilty of "giving something for

1. In spring 1975, at the request of the Extension Department, another United States Peace Corps volunteer was placed in Nahāvand to assist Matin.

2. See Savile, A.H. "Extension in rural communities", pages 6-9 (1965)

nothing". Such a policy merely turns people into beggars. The rural population may have no money to support a project but it must be willing to give its time and energy for the good of the community.

(2) Extension work must never be forced on the people. The people must be given the chance to feel the need and ask for the extension worker's help in reaching a solution to their problems.

(3) The rural population must take part in every stage of extension work. Only by this means can they be taught to solve their own problems.

(4) The extension worker must be content with steady progress and avoid attempting to do "too much too fast".

(5) Progress in extension largely depends on the training and effectiveness of local leaders.

Until these principles are applied by extension workers throughout Iran success will remain limited.

6.3. COMMUNICATIONS AND TRANSPORT

In the early sixties transport facilities in rural Olyā were very limited. The individual had to rely very much on himself, often in the form of head, shoulder or back porterage. Beasts of burden - mainly donkeys - were used for the transport of crops from the field to the farm and from the village to the town. These methods were slow and the amount of produce which could be transported relatively small. Lorry transport was also used. But, in the absence of co-operative arrangements for marketing, this means was seldom used by the share-cropper or small-holder for the transport of his surplus to the market; its use was confined to the large landed proprietor or the merchant, who were concerned with the transport and sale of relatively large quantities of agricultural produce. For both large and small farmers, however, inadequate communications and the high cost of transport made it difficult for them to do anything but sell their produce locally in Nahāvand city, though the price was often disadvantageous. Only sugar beet was always transported out of Olyā, but the cost of transport was subsidised by the sugar factory.

The transportation of people to and from Olyā sub-district was very limited at the start of the sixties, though it was beginning to increase. Mention has already been made of the annual migration of many villagers to Kuwait and southern Irān for winter work (see Chapter 5.1.) and to Mashhad on pilgrimage. There was also the growing movement of both rural and urban people to Tehrān, which was becoming a major attraction for employment and education. But in the first half of the sixties buses and other forms of transport were still few in number. Roads linking Nahāvand to neighbouring cities were narrow, unpaved dirt-tracks, and

travelling was time-consuming and relatively expensive. By 1967 there were, however, two bus services, Auto Tāj and Auto Malāyer, which ran from Nahāvand to Tehrān and back each day. Several buses were also in service between the larger villages, such as Varāineh, Beyān, Giyān and Barzul, and Nahāvand. Nevertheless, for the majority of village people local transport was still largely by foot or donkey along the detailed network of path-ways linking town and village. Even in the city of Nahāvand, with its asphalted main street, there were only ten private cars by 1968[1] and a few taxis and motor-bicycles.

Since 1968, however, the picture has been transformed. The first major development was the straightening and asphalting of the thirty kilometre section of road from Nahāvand to the Malāyer-Borujerd turning. At the same time the earth road from Nahāvand to Kangāvar was widened and improved to make it more suitable for motorized vehicles[2], and a new gravel road was constructed over the Qarin mountains from near the village of Qal'eh-e Qobād to Lorestān. Similarly, during the last few years, tracks to all but the most remote villages in Olyā have been sufficiently improved for mini-buses, tractors and the like to reach them.

The improvement of communications has been matched by the increasing volume of both public and private vehicles in Olyā: buses, tractors, lorries, pick-up vans, taxis, private cars and motor-bikes. This increase has been particularly marked in Nahāvand city where, for example, there were a dozen taxis in 1974. There has also been a rapid growth in the number of vehicles bringing goods into Nahāvand for the city and its fast expanding hinterland. But even in the villages there has been a marked investment by individuals or small groups of people in vehicles, though not as yet in motor cars[3]. The

1. John Metz, Peace Corps field notes in Tehrān.
2. In 1974 it was announced that this road was also to be asphalted.
3. The only exceptions were the former landlords of Bābā Rostam, Fīāzemān, Beyān and Baba Qāsem who each had a motor-car.

growing number of tractors was mentioned in Chapter 5.2.2. In the village of Sha'bān in summer 1974 five commune trucks were counted, four minibuses, three pick-up vans and one taxi.

Not surprisingly, the price of transport has fallen and its use increased many-fold. For example, the cost of a bus ticket from Nahāvand to Tehrān was only 100 riāls in 1974 and the majority of farmers questionned paid a visit there at least once a year. Children from Beyān and Qal'eh-e Qobād now travel daily to high school in Nahāvand by mini-bus, at a cost of five riāls each way. This would have been impossible twenty years ago; the five riāls would not have been available. A regular taxi service for people and goods runs between Bābā Rostam and the city, and the use of taxis for travel between villages along the main road and the city is commonplace. In economic terms, the marketing of farm produce has been considerably encouraged. Not only can surplus grain and pulses be quickly and relatively cheaply sent by pick-up van for sale to Nahāvand, but flowers from Sha'bān may profitably be transported by bus or lorry to the markets of Tehrān and Esfahān. Similarly, sheep are taken by lorry to Ahvāz for sale, and tomato plants and fruit trees brought for planting to Olyā from Pol-e Dokhtar and Tehrān respectively (see Chapter 4.2.2.). Nevertheless, the donkey has remained the main means of transport of produce within the village area, due to the small size of individual production and the fragmented nature of holdings.

In conclusion, the improvement of communications and the provision of cheap transport have been of considerable importance to rural development in Olyā, as indeed they have been in the whole of Irān. They have widened the market for farm produce by bringing a greater number of buyers and sellers into contact with one another, and thus stimulated further production and the growth of a

modern exchange economy. Secondly, they have allowed a freer exchange of goods between the urban centre and the surrounding rural area. Thirdly, they have encouraged and facilitated the specialisation of agricultural production and the intensification of agricultural imputs, such as chemical fertiliser and new seed. Finally, the opening up of communications has had important consequences in the educational and social field (see Chapter 5.4. and section 6.6.).

6.4. THE MARKET

Chapter 5.3. pointed out that farming in the study area to a greater or lesser extent is undertaken for marketing. It is therefore essential to consider the market as an institution, the opportunities it offers the farmers of the study area for the sale of their produce and its imperfections. The market may be divided into several component parts: on the one hand there are various government-controlled bodies; on the other hand there is the private sector of individual purchasers, shopkeepers and merchants.

The government of Irān has a presence in the market in several forms[1]. First, it exercises a monopoly over the purchase of tobacco, tea, oilseeds and opium, with the objective of controlling production of these crops. There are separate offices which license tobacco and oilseed production in Nahāvand. In the last few years only the government-run farm corporations have been granted a licence to cultivate opium (see Chapter 4.2.2.) and the small-holders in Olyā feel bitter about not being permitted to grow opium themselves, which would considerably increase their present income

1. See Kaneda, H., page 42 (1973)

levels. Secondly, the government plays a major regulating role in the production and pricing of sugar beet and cotton, though crop purchase is generally made by private factories and ginning plants respectively. As mentioned in Chapter 4.2.2., there is a Sugar Beet Office in Nahāvand which contracts with farmers to plant beet for the Borujerd sugar factory (this is particularly successful, for linked to the contract there is the incentive of cheap credit for such imputs as fertiliser and pesticide, and the amount of bureaucratic "red-tape" involved is minimal). Thirdly, the government in 1974 introduced a guaranteed price of 10 riāls per kilo) for wheat at its storage silos in an attempt to encourage marketing and stabilize prices[1]. The impact of this guaranteed price appeared minimal in Olyā in its aim of encouraging the marketing of wheat. But it did result in the private merchants increasing their prices above those offered by the Cereals Organisation - from 6-8 riāls per kilo in summer 1973 to 12-16 riāls in summer 1974 - and thus maintaining their supplies of wheat and control of the market. It was also of course beneficial to the farmer. Fourthly, the Department of Co-operation and Rural Affairs annually purchases a set quota of produce for the army. To this end a storage barn was built in the village of Kuhāni in 1971 as a collection point for pulses, but it was closed in 1974 (see section 6.1.). Fifthly, the intervention of the Meat Organisation in the meat market has served only to keep consumer prices low and given no real financial assistance to the producer.

The private or free-market sector is less rigid and less easy to define. It is composed, as stated above, of a mixture of

1. The government first intervened in the wheat market in 1933, but the results for the farmer were negligible. See Jelāli, A., "Marketing of agricultural produce in Irān", page 32 (1963)

individuals, shop-keepers and merchants, located in the villages themselves, in Nahāvand and in other cities. Individually they are stages in the marketing hierarchy for farm produce which exists between producer and consumer. Thus, the village shop-keepers and small wholesalers who trade in wheat or pulses form the first link in the bulking-up of produce (see Case 2 in Chapter 7). In Nahāvand city, with its wider catchment area for produce, three major middle-men and six smaller ones were recorded as buying farm produce in 1973-1974. The former specialised in the bulking-up of grains and pulses, which they transported to the Tehrān market by lorry. The latter were only active seasonally as a market for fruit and vegetables. The prices these merchants offered to the farmers for their produce was largely controlled by the prices they in turn were offered by the major wholesale merchants in Tehrān, who dominate the private marketing sector. During fieldwork in 1973-1974 I kept a record of prices offered by merchants in Olyā at various stages in the bulking-up process of produce, and found, contrary to general belief, that their individual profits were on the whole small. The considerable difference in the price the farmer receives for his produce and the price paid by the consumer in Tehrān and other large market centres may be accounted for by the combined profits of the many middle-men through which the produce passes and by transport costs[1].

Of the 51 small-holders interviewed, 27 of the 43 who sold beans in 1973-1974 did so directly on an individual basis to merchants in Nahāvand, 14 sold to a village agent or middle-man and only two sold to the co-operative. For wheat, the picture was different, with 61% of sales within the villages (largely for consumption purposes) and only 39% to city merchants. Sales of vegetables and

1. Jelali, A., pages 12-14 (1963)

fruit were also divided fairly equally between village and city. In the case of apricots, it was found that merchants from Nahāvand would visit the villages and contract to buy the crop before it had come to maturity, offering an advance percentage payment as an incentive to the farmer to sell, albeit at a lower price. Dairy produce was sold either to shopkeepers in the city on a contract basis, so much yoghourt or cheese per day, or the farmer's wife would sell any surplus on the city street on a day-to-day basis. Three exceptions to this norm of local marketing were noted. First, large numbers of sheep were taken by groups of farmers collectively for sale to Ahvāz at Now Ruz, when prices were at a peak and above those in Nahāvand. Secondly, sugar beet had to be sold to the Borujerd factory, to which the farmers were contracted. Finally, the gladioli growers of Sha'bān transported almost their entire crop by lorry or bus to Tehrān and Esfahān for direct sale to established retail outlets.

Although, as in the past, the market for agricultural produce in Olyā continues to be dominated by several important merchants in Nahāvand city, there are nevertheless a greater number of alternatives open to, and being taken up by, the farmer for his surplus produce. To a limited degree this has been aided by the government establishing itself as a channel for certain crops. But of greater importance would appear to be the improvement of communications and availability of relatively cheap transport, the growing recognition by farmers of prices outside the confines of Olyā, and the willingness of the producers to take their crops to the more advantageous markets. The major imperfection of the market arises largely out of the virtual absence of co-operative marketing arrangements amongst the small-holders and their subsequent lack of bargaining power with a long established and powerful private marketing network.

6.5. AGRICULTURAL CREDIT

The extent to which farmers in the study area use the different sources of credit available to them was discussed in Chapter 5.3.2. It is the aim of this section to examine the sources themselves. They may, like marketing opportunities, be divided into two groups: institutional, which include the village co-operatives, the Agricultural Bank, the Agricultural Development Fund of Irān, other commercial banks, special government programmes and processors of agricultural products; and non-institutional, which include village and city shops, merchants and other money-lenders.

The operation and effectiveness of the co-operatives as a credit institution were discussed in section 6.1. It was concluded that the co-operatives provided a valuable source of credit at a low rate of interest, but that the individual sums offered to farmers were too small for capital investment needs, whether in land, buildings, new livestock or machinery.

The Agricultural Bank, also known as the Agricultural Co-operative Bank of Irān, was originally established in 1930 as the agricultural branch of Bānk-e Melli-e Irān. It became independent in 1933 and has since provided both long- and short-term credit to individual farmers. Interest charges for any term of loan to fifteen years are 6% to individuals, plus a 1% evaluation fee. In addition, the bank has performed such functions as accepting deposits, paying landlords the purchase price of villages, collecting from the farmers the instalments owed by them on land, arranging the government financial support for co-operatives (at a 4% rate of interest), and financing special government programmes for the improvement of agricultural production. The main weakness of the Agricultural Bank's lending operation for the individual small-holders would seem to be that the sanction and the size of each loan is related more to the

collateral security offered than economic viability, repayment capacity, or even the intended purpose of the loan[1]. But an equally important shortcoming, perhaps, is the fact that loans to individuals are not supervised adequately and often the use of the loans for the stated purpose is the subject of doubt. The bank in Olyā seems to have attempted to come to terms with these problems by standardizing the length of the repayment period to three years for the small-holders, and largely ignoring the question of supervision.

The Agricultural Development Fund of Irān (ADFI)[2] was created by the government as an autonomous agency in 1968 to provide long-term finance of 6-15 years for large agricultural projects, including farm corporations, and to invest in private companies by equity participation. Its share in the total volume of agricultural credit is small, but it handles the major portion of the institutional long-term credit for agriculture. ADFI may not make loans of less than one million rials (five million until 1972) and in its first three years of operation the average size of loan was about fifteen million rials. This large size of loans, lack of representation in the provinces, and inability to finance short-term credit have limited the clientele of the bank to only large commercial farmers, who constitute a relatively small part in the total spectrum of agricultural production units in Irān. Thus, in Olyā, ADFI has so far played no part in the provision of agricultural credit.

The credit activity of commercial banks for agriculture is a minor part of their total lending operation - in 1970 only about

1. Mehrad, B. "Agricultural credit in Irān", CENTO, Tehrān (1972)
2. ADFI was re-named the Agricultural Development Bank in 1974.

10%[1]. In the absence of a production credit system for agriculture, most of the commercial banks' finances which end up in agriculture are in the form of credit to big agriculturalists, processors, merchants and exporters, which is often sub-lent to the farmers at stiffer terms. Three banks, Bānk-e Sāderāt, which has the biggest network of rural branches of all the banks, Bānk-e Sepah and Bānk-e Melli[2] were identified as active in agriculture in Olyā. In the eleven villages under study, only Sha'bān had a small branch of Bānk-e Sāderāt (see Table 59), which had been established in 1968. The loans from the commercial banks are totally unsupervised, generally short-term, not orientated towards production purposes and carry a high interest rate of usually 12-16%

Institutional credit is also provided to farmers through certain special government programmes and agencies. The channels may be regional development authorities, such as the Western Development Authority, organisations concerned with individual crops, such as sugar beet or tobacco, or government agencies in charge of the distribution of farm machinery and fertiliser. The programmes for which credit is provided aim generally for improved production practices of special crops, notably sugar beet in Olyā (see Chapter 4.2.2.), encouragement in the use of modern inputs, and enhancement of agricultural development in special areas. The most important positive aspects of these types of credit are their production orientation and concessionary rates, for example, the reduced price of chemical fertiliser and fruit trees. Moreover, by providing most of the credit in kind, its use for the purpose intended is almost guaranteed. The main disadvantages of direct government credit are its relatively high cost and again the lack of trained

1. Mehrad, B., page 223 (1972)
2. Since 1972 Bānk-e Melli has provided credit for agriculture in co-operation with AOFI.

staff to supervise its correct use.

It was shown in Chapter 5.3.2. that organised credit accounts for only about 50% of the total amount of loans obtained by farmers in Olyā. The remaining amount is obtained from private money-lenders, middlemen traders, shop-keepers and relatives. These loans have several major disadvantages for the farmer: they generally carry interest rates of 20-30% or more; they are not production orientated; the repayment period is usually short, lasting until the sale of the farmer's crops at harvest-time; and they may include foresale of the crops at disadvantageous prices, especially when traders are the lenders (see Case 2 in Chapter 7). The only advantages and the reason for the success of this type of credit are its ready availability and, as mentioned before, its freedom from bureaucratic "red-tape". The government of Irān hopes that gradual education of farmers about the high cost of non-institutional credit, and the availability of organized credit with greater relative ease, will gradually reduce the importance of non-institutional credit from private money-lenders[1].

1. Despite press announcements (see Kayhan International, 27:11:72, and Economist Intelligence Unit QER, "Irān", No. 4, 1972) of a "loans wipe-out" of small-holders' debts in 1972 by the Ministry of Co-operation and Rural Affairs, there were no signs of such a move in Olyā in 1973-74. In any case, such a move would have only a temporary impact, given the continuous need to borrow of the farmers, when what would be of much greater significance would be the provision of much larger quantities of low-cost, institutional credit.

6.6. VILLAGE SOCIAL SERVICES

The expansion of village social services and institutions also shows the magnitude of changes in rural Olyā. This expansion has been encouraged by government assistance in the provision of, for example, schools, drinking water systems, a malaria eradication programme, and the compulsory establishment of village councils and Houses of Justice. But particular attention must be drawn to the efforts of the villagers themselves to improve their social environment. Village initiative may be seen in, for example, the number of new public baths and mosques constructed in the last few years. Finally, the growth in numbers of village shops will be examined as a further indicator of change.

A major aim of the social reforms of the last two decades in Irān has been the establishment of primary schools throughout the country with the goal of universal education and literacy. To this end a Literacy Corps was established in January 1963. The corps consisted of military recruits who spent six months receiving both basic military training and teacher training, and then eighteen months teaching in village primary schools. The programme worked well and expanded rapidly. Between 1963-1972 over 80,000 men taught in the Literacy Corps. In 1969, the corps was expanded to include women as well, and by 1972 over 10,000 corpswomen had also served in the literacy programme[1].

Rural Olyā was poorly provided with schools at the start of the sixties. Of the eleven villages under study only Kuhāni, Sha'bān and Beyān had schools by 1960, but attendance was low and teachers few in number. However, the Literacy Corps programme has resulted in the transformation of this picture. By 1974 there was

1. International Communicators Irān, pages 31-33 (1973)

a primary school in each of the eleven villages, and indeed in almost all the villages of the Olyā sub-district. The number of teachers was adequate (see Table 58), teaching materials had improved, and the attendance of both girls and boys had increased markedly (see Chapter 5.1.). Facilities for further education had also expanded in Nahāvand city, where there were three secondary schools in 1974, and in neighbouring Malāyer (a technical college) and Borujerd (an agricultural college).

The government has also helped to deal with the problems of ill-health and disease in rural Irān by the introduction of a Health Corps in 1964 and other medical investment, by programmes of family planning education and malaria eradication, and by financial assistance in villages to improve their drinking water supplies. In Olyā the improvement of communications has put even the remotest villages in relatively easy reach of the hospital, clinics and several doctors in Nahāvand. A two day a week clinic has also operated in the village of Sha'bān since 1970 and construction of a small hospital in Sha'bān was begun in 1974. In addition, Nahāvand has a mobile medical unit which travels to the villages for vaccination and for emergency cases.

A third professed aim of the government in recent years has been to turn the affairs of the villages over to the villagers themselves and thus give them a greater say in the running of their own affairs. The establishment of rural co-operatives, as mentioned in Chapter 6.1., played some role in fulfilling this aim. But of greater importance has been the creation, or in some instances the revival, of the institution of the village council (anjoman-e deh)[1]. Some form of consultation among the elders and heads of households

1. The council consists of five to ten elected members who work on an honorary basis.

Table 58 Primary school facilities in the study area

	Primary school		Literacy Corps teachers		Other teachers	
	1960	1974	Male	Female	Male	Female
Gol-e Zard		1		2	1	
Raziābād		1			1	
Kuhāni	1	1		8	2	
Bābā Rostam		1	1	2		
Fiāzemān		1			2	
Jahānābād		1		4		
Sha'bān	1	1		8	2	
Qal'eh-e Qobād		1		3	1	
Beyān	1	1		4	1	
Bābā Qāsem		1		2	1	
Milāb		1		2		
TOTAL:	3	11	1	35	11	

SOURCE: Fieldwork, 1974

has traditionally existed in Irān's villages, though in the pre-land reform period village councils were to be found in only a small number of villages and such consultations as took place generally had few results. Over the last decade there has been an attempt by the government to establish village councils in a much larger number of villages, to provide them with some source of revenue, and to turn over to them responsibility for small-scale local development projects. In Olyā it was found that the villagers contributed a certain amount of money each year, which in theory represented 2% of their income, as a form of village development tax. The village council was then responsible for using this money for such projects as a new public bath or improving the drinking water supply.

Since 1963, villagers have also handled and settled their own minor judicial disputes. This has been accomplished through the vehicle of the House of Justice or Equity Court. Three persons, elected by the villagers themselves and approved by the provincial judiciary, form the court of each village. The court is empowered to hear and decide on cases involving small sums of money or disputes of a minor nature[1], and works chiefly through arbitration by hearing out a dispute and proposing a settlement to which both sides can agree. In this way, the courts in Olyā have saved villagers the need to travel to Nahāvand in order to settle minor disputes and also reduced the pressure on the provincial court and staff.

However, I found that the villagers were in general far from proud of their village council or Equity Court and often unwilling to stand for election to these bodies, which were honorary.

1. Serious disputes and criminal offences are handled by the gendarmerie and provincial court in Nahāvand.

Indeed, they considered the village council and Equity Court in much the same light as they regarded the co-operatives or gendarmerie: that is, as further extensions of the arms of the government and detrimental to their independence.

The villagers' own role in social improvement has been expressed most clearly in their considerable investment of time and money in the construction of piped drinking water systems, more hygienic public bath facilities and new mosques. In the past drinking water in the eleven villages was largely derived from natural springs and wells. Since 1970 Bābā Rostam, Kuhāni and Jahānābād have built underground pipe-lines to carry water from their larger springs into the village and to a network of taps. Other villages have improved their springs by cementing them in and adding taps for convenience of use and conservation of the water. Similarly, new public baths (hammām) have been built in Kuhāni, Jahānābād, Sha'bān, Qal'eh-e Qobād, Beyān and Milāb. Finally, though all eleven villages have mosques, new ones have been added in Kuhāni and Beyān.

Just as village infrastructure and institutions have expanded and benefitted the villagers socially, so the number of shops and other private sector services have grown. The national census of 1966 recorded a very limited number of shops and other services in the eleven villages under study (see Table 59). Although some reservations may be made as to the accuracy of the 1966 census, it is clear from the survey I conducted in 1973 that there had been a considerable expansion in both the number of village shops and also of services such as flour mills, joiners and a bank.

Table 59 Shops and services in the study area

Gol-e Zard	1966	1 A/K
	1973	1 A/K - 2 E - 1 H
Raziābād	1966	-
	1973	-
Kuhāni	1966	12 A - 1 C/K - 2E - 1 F - 1 I - 1 K
	1973	11 A - 2 B - 1 B/D - 1 C/K - 2 E - 1 H 1 I - 1 K - 1 L - 1 N - 2 Q
Jahānābād	1966	1 A - 1 F - 1 I - 1 K - 1 L
	1973	4 A - 1 A/B - 2 A/C - 1 B - 1 D - 1 E 1 F - 1 I - 1 K - 2 L - 1 P
Bābā Rostam	1966	4 A - 1 E - 1 L
	1973	3 A - 1 A/B - 1 E - 1 H - 1 L
Fiāzemān	1966	1 A - 1 E
	1973	2 A
Sha'bān	1966	7 A - 2 B - 2 E - 1 I - 1 I/J - 1 L - 1 M 1 P - 1 T
	1973	8 A - 1 A/B - 2 A/C - 4 B - 3 C - 2 D - 2 E 1 G - 1 H - 1 I - 1 I/J - 1 L - 1 M - 1 O 1 P - 1 Q - 1 R - 1 S
Qal'eh-e Qobād	1966	4 A - 1 B - 1 T
	1973	5 A - 1 A/B - 1 E - 1 H - 1 L - 1 P
Beyān	1966	7 A - 3 B - 1 E - 1 L
	1973	9 A - 1 A/B - 3 B - 2 E - 1 H - 1 L
Bābā Qāsem	1966	1 A
	1973	3 A - 2 A/B - 1 E - 1 P
Milāb	1966	3 A - 1 E
	1973	4 A/B - 1 E - 1 P

Key: A. Retail outlet - general goods
B. Butcher
C. Merchant/wholesaler
D. Fruit and vegetable shop
E. Flour mill
F. Metal work
G. Bank
H. Co-operative shop
I. Bicycle repairs
J. Mechanic

(Continued on next page)

Table 59 (Continued)

K.	Tea-house	L.	Barber
M.	Baker	N.	Donkey saddles
O.	Kerosene	P.	Joiner
Q.	New, empty shop	R.	Clinic
S.	Charcoal	T.	Shoe-maker

SOURCE: 1. 1966 information from Plan Organisation, Irānian Statistical Centre. "Village Gazetteer. Hamadān and Ilām farmāndāri-e kolls' " (1970)

2. 1973 information collected during fieldwork.

6.7. CONCLUSION

This chapter has shown that over the past decade, and in particular over the last four to five years, there has been a marked growth in the number and range of services and institutions available to the rural population of Olyā. There is no doubt that the expansion of the supporting system has brought significant and lasting social benefits: improved health and welfare, increased literacy and opportunities for further education, and aspirations for a better life for the future. Economically, however, many of the benefits, as originally conceived, have been dissipated. Thus, the co-operative societies which were intended to establish the independence of their members, now appear more an arm of the government and a vehicle for the collectivization of agriculture. Similarly, institutional credit has never matched up to the needs of the small-holders.

CHAPTER SEVEN CASE STUDIES

In the following case studies a detailed examination is made of seven individual farmers and one former landlord. These cases have been selected from the 51 farm-households studied in depth during fieldwork (see Appendix 1) and eight large landlord families studied in less detail, and may be seen as the "human evidence" upon which the arguments of this thesis have been based. An attempt has been made to consider each case against the background of the changes outlined in the preceding chapters. At the end of the chapter a summary of the data collected through questionnaire surveys of the seven small-holders is presented in tabulated form to facilitate cross-comparison.

CASE 1 HASAN OF KUHĀNI

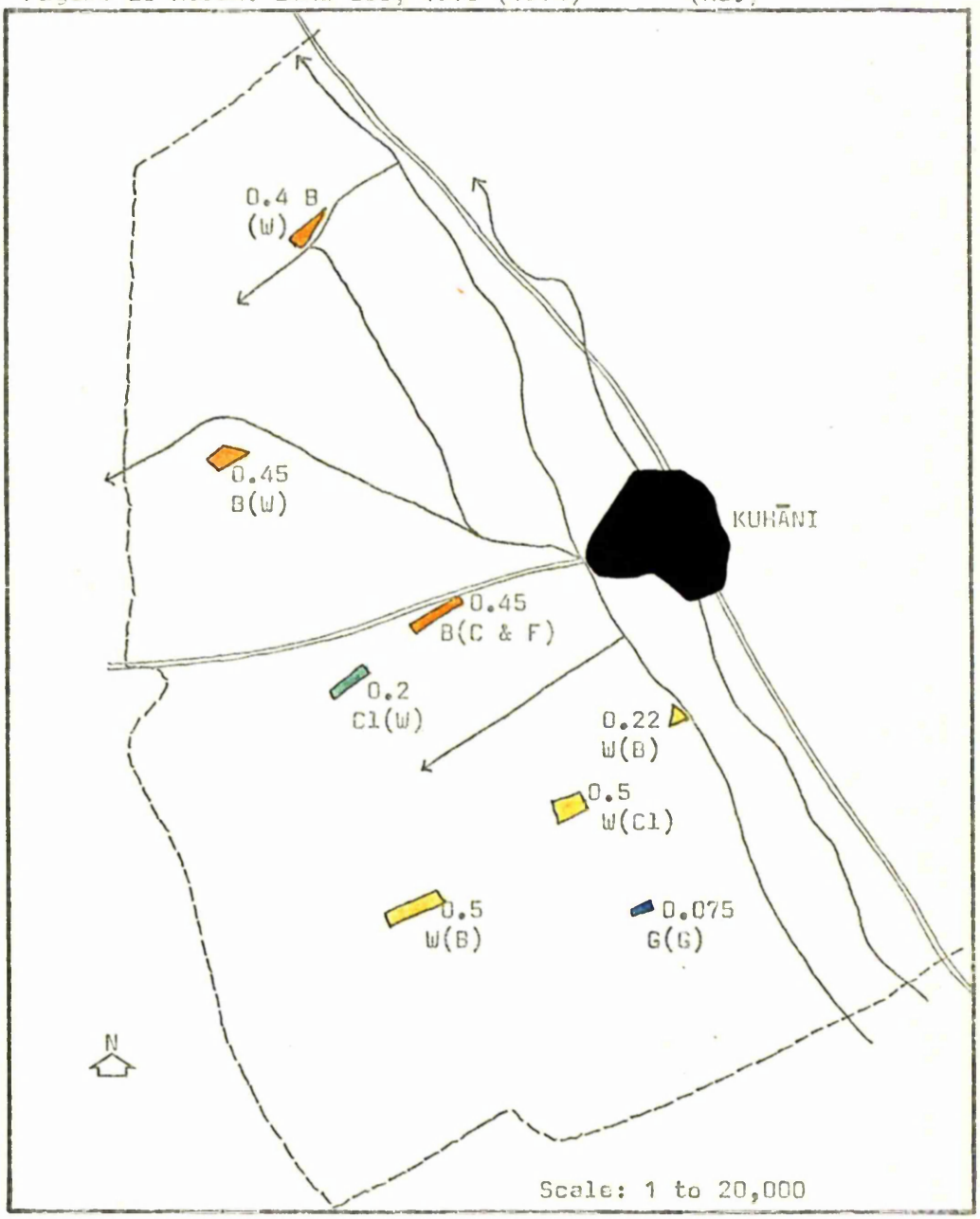
Hasan lives in a mud-brick house in the centre of the village of Kuhāni. The house belongs to him and consists of two living rooms, a stable, two work rooms and a yard of some 300 square metres. He has three young sons (aged 12, 9 and 5 years) and three daughters (6, 3 and 2) to support and does not want any more children.

Hasan farms an area of 2.8 ha. of irrigated land, which is divided into eight parcels scattered over the village area[1]. The farthest parcel is over half a kilometre from his home (see Figure 25). He also has the right to cultivate a share of Kuhāni's dry land to the north of the Sha'bān canal, but rarely uses it for the soil is thin and stony and yields are generally poor. Hasan received this land at the time of land reform in 1965 but has still not paid off the full cost of it, nor received the title deeds, and thus has not been able to exchange land and consolidate his scattered parcels. Before land reform all his land was owned by Mohammad Jafār Matin and Shirzād Zamāniān (see Case 3), the two main peasant proprietors of Kuhāni, for whom Hasan worked it under a crop-sharing agreement (see Chapter 3.1.).

Since becoming a small-holder Hasan has made a considerable effort to improve the income from his land. First, although his farm implements are much the same as a decade ago, he works harder on the land and irrigates more thoroughly. Improved irrigation has been facilitated by the greater availability and reliability of water supplies from the Sha'bān canal since 1969, and has enabled Hasan to intensify cultivation and reduce to nothing the falloued area

1. Hasan shares one parcel - planted with grapes - with his brother, who receives one-third of the harvest.

Figure 25 Hasan: land use, 1973 (1974) (ha.)



Key:

W	Wheat	T	Tomatoes
Ba	Barley	V	Vegetables
S	Sugar beet	Su	Sunflowers
B	Beans	Gl	Gladioli
C	Chick-peas	G	Grapes
Cl	Clover	F	Fruit trees
A	Alfalfa	Ta	Timber trees (tabrizi)
P	Potatoes	Fa	Fallow

which in the past had generally accounted for one-third of the land each year. He pays a total of 1,260 riāls annually (45 riāls per jarib) to the Irrigation Department for water, which he regards as a reasonable price. Secondly, he has made increasing use of chemical fertiliser, and in 1973 purchased 500 kilos (10 kiseh) of diammonium phosphate at a cost of 6,000 riāls. Thirdly, he sold his two work cattle (gāvband) in 1971 and has since hired a tractor and related machinery from a contractor (see Cases 4 and 6) for ploughing and threshing operations. He feels that deeper ploughing by tractor has improved his soil whilst saving him time and the expense of the year-round upkeep of cattle. Fourthly, in 1972 he joined with a large number of farmers in Kuhāni to participate in the wheat deal of the Nahāvand Department of Agriculture (see Chapter 5.2.3.) and has since planted improved Omid seed. His present yield averages about 300 kilos (one kharvār) per jarib, or about double the yield of a decade ago. Fifthly, he purchased for the first time a litre of Malathion pesticide spray in 1973, with the advice of an extension corpsman, to counteract aphids on his beans. Finally, he planted a well spaced orchard of red and golden apple trees in spring 1974 on almost half a hectare of land, following the example set by more progressive farmers (see Chapter 4.2.). This marks his first real effort to introduce a more profitable crop (that is, other than opium).

Hasan spends the greater part of his time working his land. He receives little help from others. His eldest son is able to help his father with the lighter jobs, but Hasan prefers him in any case to concentrate on his education at secondary school in Nahāvand. Some help is provided on a reciprocal basis by his brother, Nurollāh, who also has land in the village, particularly in field preparations when a two-man shovel is used to make

irrigation ditches, but at the busiest times of the year - planting and harvesting - he must employ "landless" villagers as paid labourers. His equipment includes the traditional farm implements described in Chapter 5.2.2. (see also Table 66). In addition, he borrowed a back-pack sprayer from the Kuhāni extension corps office in 1973 and 1974.

Agricultural production is directed first and foremost to meeting the basic needs of the household: that is, wheat for bread, pulses to enrich various stews (khoresht), grapes for vinegar or eaten fresh as a dessert, and clover to feed the animals (see Table 60 below). The latter - 2 cows, 1 donkey and 5 hens in 1973 - in turn provide dairy produce, transport and eggs repectively. Hasan asserted that the profit on buying and selling sheep was too small to be worth the time which it requires. It seems more likely, however, that he cannot raise sufficient credit at a low enough rate of interest to make such transactions worthwhile.

In the last few years Hasan has planted much the same crops on his land. Thus, wheat and beans have occupied the bulk of the holding and Hasan rotates these two crops annually on the parcels to the west and east of Kuhāni following traditional practice (see Figure 25). A questionnaire undertaken by the extension corps in the village in 1971 showed that his only other crops were clover, opium and grapes (see Table 60 below). As mentioned above, the introduction of fruit trees in 1974 suggests that Hasan is now seeing the advantage of introducing new cash crops.

Although Hasan suffered from the flood of July 1971 (his house was damaged, he lost crops to the west of the village, and eight sheep were killed) he was able to make up financially for these losses by the income from his opium crops in 1971 and 1972.

Table 60 Land use: Hasan (ha.)

	1971	1973	1974
Irrigated Wheat	1.22	1.22	1.05
Beans	1.1	1.3	0.72
Chick-peas			0.45
Clover	0.3	0.2	0.5
Opium	0.1		
Grapes	0.075	0.075	0.075
Fruit trees			0.45
Total	2.795	2.795	3.245

Note: No dry land crops since 1971.

Source: Fieldwork, questionnaire surveys.

In the last few years, however, only the government-run farm corporations have been granted a licence to cultivate opium (see Chapter 4.2.2.) and Hasan and the other small-holders in Kuhāni feel bitter about not being permitted to grow opium themselves, which would considerably boost their present income levels.

Despite the occasional setbacks, Hasan asserts that he has always produced a surplus, which he has sold or bartered for other goods, and that this surplus has grown considerably in the last few years. Of his 1973 (1352) harvest I recorded the sale of 1,200 kilos of wheat, 2,400 kilos of beans and 1,500 kilos of straw, which gave him a total gross income of almost 60,000 rials.

However, the improvements in husbandry which have given rise to an increased marketable surplus and farm income have only been achieved by borrowing heavily[1]. In 1973 Hasan held a one year

1. He does not have a bank account for savings. His reserves take the form of hand-made carpets, of which he had four in 1974.

loan from the Kuhāni co-operative of 15,000 riāls and a three year loan from the Nahāvand Agricultural Bank of 30,000 riāls. In addition, he considered that he also had outstanding debts of some 60,000 riāls[1] at the time of the harvest of 1973, which were owing to shopkeepers in both village and city shops for advance purchases of household goods and foodstuffs, to labourers for wages, and for medical costs. Hasan managed to meet these costs only by the money earned from sources other than land. Of these sources the sale of carpets, made by his wife and eldest daughter, are the most important and in 1973 they sold three (each of 3 sq. metres) worth in all some 50,000 riāls. They make two or three carpets on average each year. His wife sells excess dairy produce from their two cows in the village and in Nahāvand in the winter months which might earn 400 riāls per week.

Although Hasan is clearly prospering, he is also aware of the limitations imposed on him by the nature of his farm, his large family of six young children, and the rising costs of farm imputs and the requirements of his family. He feels that the co-operative society has not lived up to its promises, though the credit it offers has been valuable to him. He welcomed the assistance of the extension corps workers in laying out his new orchard but asserted that they had not provided him with any other help. Believing that agriculture holds little future for his sons, he hopes that they will find employment in the city, and intends to encourage them in that direction. For himself he is fatalistic and accepts that his future is not in his hands. Moreover, he feels little security, for he still does not hold the title deeds to his land, and the prospect of losing his land to a farm corporation has

1. It is difficult to be sure of the accuracy of this figure for Hasan does not keep written records of his debts.

reduced his confidence in the future. On the other hand he is not discontented and recognises that his standard of living is much better than a decade ago.

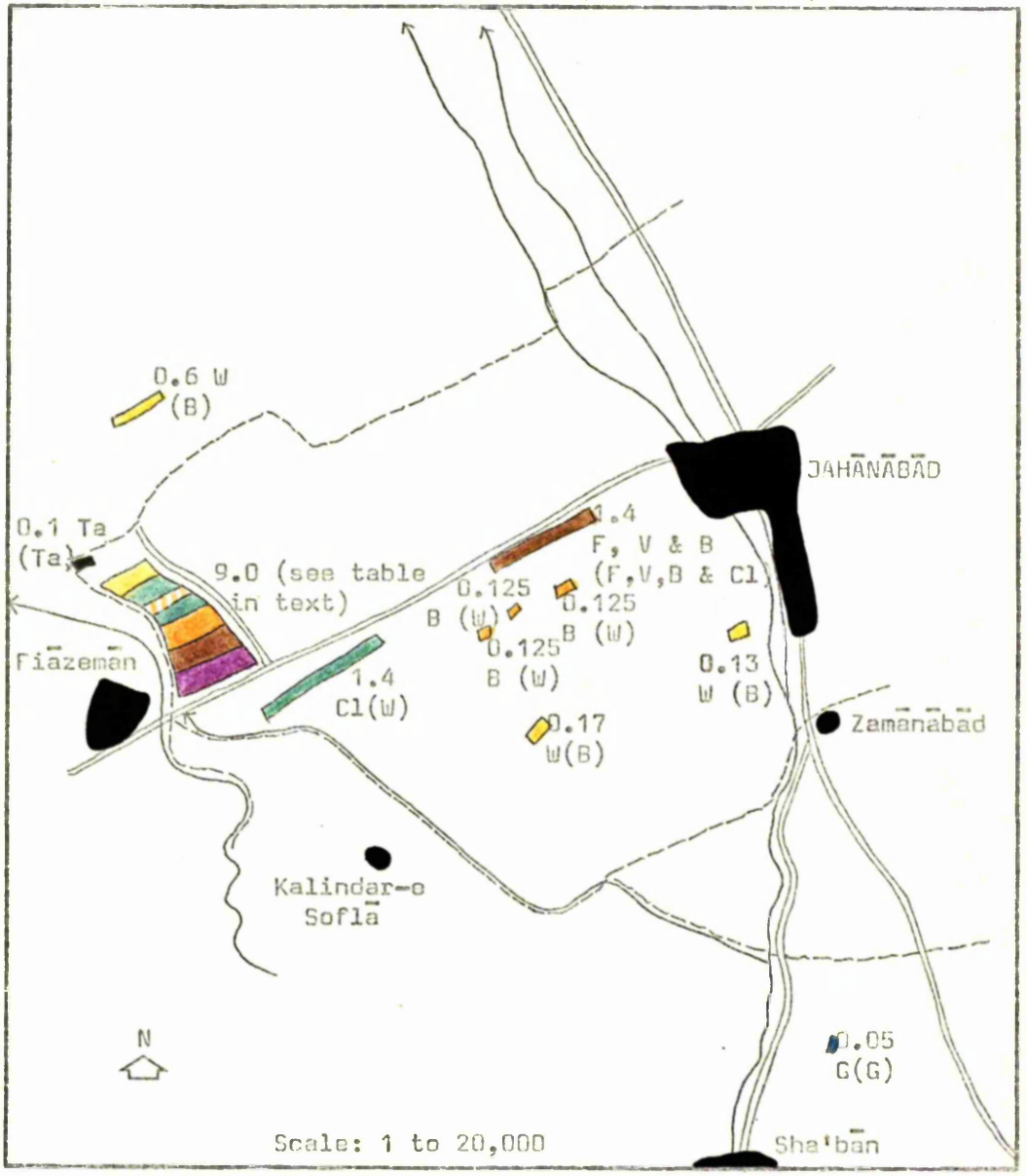
CASE 2 AHADOLLĀH OF JAHĀNĀBĀD

Ahadollāh is one of four brothers who form a working partnership. This is based first and foremost on the joint ownership of some eight hectares of irrigated land and ten hectares of dry land. Secondly, it is based on the ownership of a piece of land in Nahāvand city which is rented by the Department of Agriculture. Thirdly, the three brothers who are permanent residents in Jahānābād (the fourth is a mollā and lives in Qom) jointly own a village shop and a taxi. Fourthly, the brothers own a number of animals: 4 cows, 2 work cattle, 3 calves, 2 donkeys and 2 hens in 1973[1]. There is a large degree of division of labour among the brothers, with the one in Qom taking no part in family economic affairs, Ahadollāh in charge of the cultivation of the land, the third brother, Hāji Morād, running the shop and organising financial matters, and the fourth driving the taxi. The brothers' wives and children look after the animals, which are kept mainly to meet household needs. The women of the household also make carpets - usually 3-6 per year.

Their father, who died in the mid-sixties, had been a share-cropper in Jahānābād before land reform and had worked some six hectares of irrigated land (one joft) on a crop-sharing agreement for the landlord. At land reform in 1965 the family was left with only half this area, but the brothers have added considerably to the holding in the last few years. In 1967 Ahadollāh and Hāji Morād bought six jaribs of land in Kuhāni and in 1969 the brothers added a parcel of four jaribs to a one hectare block they already owned just below Jahānābād. Finally, in 1970, in joint partnership

1. The brothers do not buy and sell sheep, which they consider "too much trouble".

Figure 26 Ahadollāh: land use, 1973 (1974) (ha.)



with a farmer from Fiāzemān, they bought a nine hectare block of irrigated land by the river from the landlord (see Figure 26). In the following discussion only half this area - 4.5 ha. - will be regarded as their own, for they receive half the harvest each year as their share.

In both 1973 and 1974 all 8 ha. of irrigated land and also 2 ha. of dry land were under cultivation. The main crops included wheat, pulses, clover, sugar beet and fruit trees (see Figure 26). On the parcels of land which lie in the midst of the village open fields (sahrā) they follow closely the traditional crop rotation of wheat and beans. However, their orchard plot by the track to Fiāzemān, which is surrounded by a mud wall for protection, stands out clearly as a break with custom. Similarly, the nine hectare block is planted with a range of crops which bear no relation to the village crop pattern:

	1973 (ha.)	1974
Wheat	2.2	2.25
Beans	2.5	
Chick-peas	0.6	
Sugar beet	0.8	4.5
Clover	0.8	0.5
Potatoes	0.3	
Fruit trees	1.3	1.3
Tabrizi	0.5	0.5
TOTAL	9.0	9.05

The greater part of the work on the land is undertaken by labourers. For pulses and sugar beet this takes the form of a crop-sharing agreement, by which Ahadollāh provides all the inputs except labour and receives two-thirds of the harvest. For wheat

and clover labourers are hired for only the planting and harvesting periods on a daily wage basis and can choose to be paid either in cash or kind. In addition, much of the spring-time work of field preparation - ploughing and discing - is accomplished by hiring a tractor. The brothers have a plough team, which they use in their orchard and on their dry land, but Ahadollāh maintains that hiring a tractor is economically beneficial to him and reduces the volume of work falling on his shoulders[1]. Nevertheless, he dismisses the idea of buying a tractor as too risky an investment given the current uncertainties of farming, above all the possible loss of the land to a farm corporation, and his own lack of mechanical knowledge.

Yet the brothers have shown themselves keen to intensify the use of their land and to increase their income from it. In particular, they have invested in new fruit trees, which now occupy 2 hectares of land. Similarly, they planted over two hectares of sugar beet in 1974 and halted cultivation of chick-peas which had given very low yields over the last few years. They have also markedly intensified their use of agricultural imputs, purchasing 2,000 kilos of diammonium phosphate fertiliser and four litres of pesticides in 1973, and buying pruning shears and a back-pack sprayer to use on their fruit trees. It is very difficult to assess their total income from the land, but Ahadollāh suggested that in 1973 it amounted to some 200,000 riāls, of which 120,000 riāls came from beans alone. Up till now their fruit orchards have not produced a return but they can be expected to bring in considerable additional income as they reach maturity in the next few years. Ahadollāh is concerned that this long-term investment in

1. Ahadollāh has a full range of farm implements, and also a pair of secateurs and back-pack sprayer.

fruit may be at risk, due to the threat of the farm corporation, but accepts this fatalistically. He hopes that the principle of "root-rights", upheld at land reform (see Chapter 3), will ensure the brothers compensation if this threat materialises. It is noticeable, however, that he has not planted any new trees since 1972, and has no intention of doing so until the government's intentions regarding the location of the farm corporation in Olyā are made clear.

In the face of this uncertainty, which is the only real cloud blotting their prospering farm activities, the brothers are in a very favourable economic position when compared with many other small-holders, for they have the security of several different sources of income other than the land to draw on. Their shop in Jahānābād, which they opened in 1969 (1348), sells a wide range of foodstuffs and household goods such as vegetables, sugar, tea, cigarettes and razor blades. Hāji Morād, who runs the shop, also acts as a middle-man in the village, and this provides another valuable source of income. He thus forms the first link in the bulking-up of farm produce, mentioned in Chapter 6.4., buying especially wheat and pulses from the farmers and in turn selling to the larger merchants in Nahāvand. In addition, he advances credit on the guarantee of repayment in kind at harvest-time and sells fertiliser. In summer 1973 Hāji Morād demanded 1 kilo of wheat for every 5 riāls credit he had advanced, although the market price of wheat in the Nahāvand bāzār was 6 or 7 riāls per kilo, thus earning himself a 20-40% profit (see Chapter 6.5.). The second major source of income is the Mercedes Benz taxi which the fourth brother operates between Nahāvand and the surrounding villages. Finally, the brothers own a 900 square metre piece of land in Nahāvand, purchased in 1969 for about 600,000 riāls, which they

lease to the Department of Agriculture for a rent of 7,000 riāls per month.

The large capital assets - land, taxi and shop - of the brothers have been made possible by their ability to raise credit, which has in turn been secured on their collateral of farm land in Jahānābād and initial ability to re-pay their debts from agricultural income. Ahadollāh was very unclear about the total volume of credit the family held in 1973, for he does not keep a written record, but thought it approached 150,000 riāls and was borrowed mainly from the village co-operative, Agricultural Bank and non-institutional sources. I should add that his brother, Hāji Morād, who was the senior member of the family and the main manager of the household's finance as well as the shop and merchant business, was very reticent in discussing anything to do with money matters.

I asked Ahadollāh for his opinion of the village co-operative society, of which he had had to become a member at the time of land reform. Although he at once praised it for providing him with credit, it was clear that he felt no loyalty towards it. His share in the co-operative did not instill in him any real self-interest in its success, and the volume of credit he could draw from the society was disappointingly small.

Finally, I should like to mention that despite the considerable capital assets of the brothers and the high income they earn, they have to support 17 permanent members of the household (see below) and the fourth brother in Qom:

Ahadollāh - wife, 1 son (4 years old), 2 daughters (2 and 6)

Hāji Morād - wife, 6 children

Third brother - wife, 1 child

Their mother

CASE 3 SHIRZĀD OF JAHĀNĀBĀD

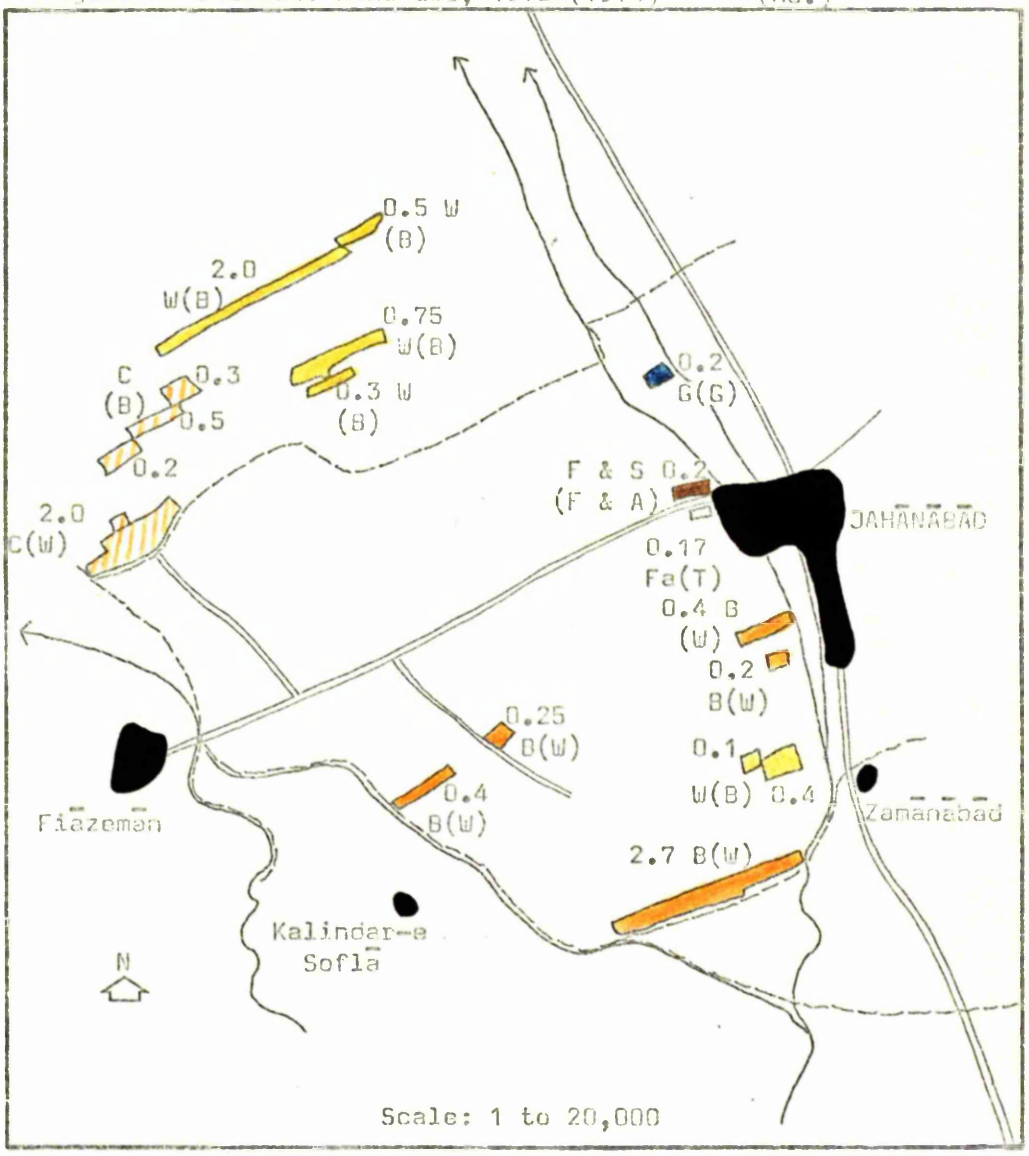
Before land reform Shirzād was one of the wealthiest and most influential villagers in Olyā. This position was a result not only of being the landlord's representative and a share-cropper with two joft of land in Jahānābād, but also of being a peasant proprietor (khordeh mālek) in his own right in the villages of Kuhāni, where he jointly owned 60 hectares of land with Hāji Mohammad Jafār Matin (see Chapter 3.1.), and Sha'bān. As a result of the second stage of land reform, he sold half his land in Kuhāni and all his land in Sha'bān, but was able to retain half the land he worked in Jahānābād. He has since sold several additional pieces of land in Kuhāni.

His present total holding of 12 hectares of irrigated land and his retention by the landlord, 'Abdol Amir Zamāniān, as manager of his remaining 50 hectares of land in Jahānābād, have ensured Shirzād a continued position of respect and economic strength. This was demonstrated in 1973 by his construction of a large new house, built of fired- and mud-brick and with metal window frames[1], with an orchard and garden of over 2,000 square metres, the whole surrounded by a high mud wall, on the edge of the village.

In 1973-74 almost all his 19 parcels of irrigated land were planted with wheat or pulses, which are rotated annually in keeping with the traditional village cropping pattern (see Figure 27). In addition, Shirzād owned a fruit orchard of two jarib, which he had planted in 1971, and held two parcels of grapes and tabrizi jointly with the landlord, who receives one-third of the crop as his share. Although his crops are largely the same as a decade ago, Shirzād has considerably increased his income from the land by reducing his fallowed area, introducing new Omid wheat seed, and

1. It has five living rooms and adjoining stables and work rooms.

Figure 27 Shirzād: land use, 1973 (1974) (ha.)



making greater use of pesticides and chemical fertiliser. In 1973 he purchased 2,750 kilos of diammonium phosphate and urea. By these same improvements in husbandry he has also increased crop production on the landlord's land and thus his own income which amounts to 10% of the annual harvest.

Neither Shirzād nor his brother, who has a half share in the land, do any manual work themselves, but instead employ hired machinery or labour. For pulses, ploughing in spring is done by hired tractor but labourers are employed for all other operations on a form of crop-sharing agreement, by which Shirzād provides all the imputs except labour and receives two-thirds of the harvest[1]. For wheat, labourers are hired for the planting and harvesting periods only on a daily wage basis. However, ploughing in autumn is done by tractor and in 1974 Shirzād preferred to use a hired combine for harvesting, for, by co-ordinating operations on his own and the landlord's land, he found this more profitable than hiring labourers.

Despite his managerial skill and relative wealth in comparison with other villagers in Olyā, Shirzād considers farming to be an occupation of low status when put in the perspective of new employment opportunities in the urban areas of Irān (see Chapter 5.4.). Moreover, he feels that the small-holder has been largely neglected by the government in recent years and that the promises made at land reform have not been fulfilled. He has no confidence in the village co-operative, nor in the support of agricultural officials in general, and in particular is concerned about the possible loss of his land and livelihood to a farm corporation.

1. Shirzād thus provides the farm implements, water (at a cost of about 4,000 riāls per annum), fertiliser, seed and pesticid

For these reasons he is giving his children every encouragement to become properly educated and qualified for a job which is not tied to the land. His oldest son, aged 23, is now at college in Hamadān training to be a teacher. He speaks a little English, his hobby is drama, and he has no wish to stay in Jahānābād or work on the land in his father's place. The second son is an employee of the Nahāvand Agricultural Department. The third is at secondary school in Hamadān and hopes to enter university in Tehrān. Shirzād hopes that his youngest son, aged 8 years, will follow their example.

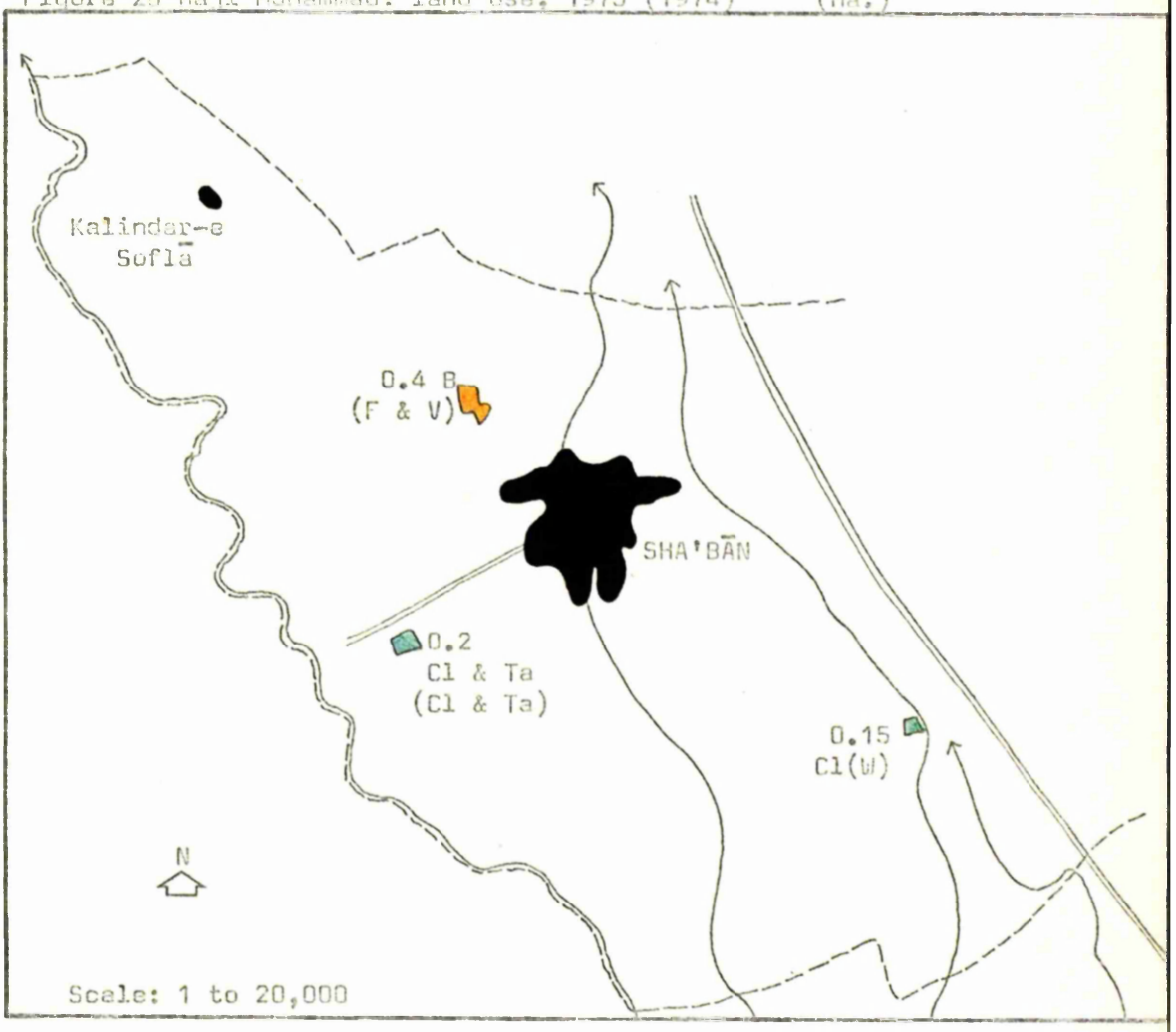
CASE 4 HĀJI MOHAMMAD OF SHA'BĀN

Hāji Mohammad is 47 years old and his wife 42. They were born in Sha'bān and now live in a two-storied, mud-brick house, with two living rooms on the upper floor, and stables and storage space below. Their family consists of five sons and two daughters, one of whom is married and lives in Ahvāz. The eldest sons are 18 and 12 years and assist their father with farm work.

Hāji Mohammad was one of the first villagers in Olyā to purchase a tractor and related equipment - metal plough, disc and threshing machine - in the early sixties and to do work on contract for other farmers. In 1973 he had a Massey-Ferguson tractor, which he bought for about 600,000 riāls from a dealer in Malāyer the previous winter, and spent much of the year from spring to autumn working with it away from the village, especially in the province of Lorestān. Over the past decade contract work has provided his main source of income. He charges 500-700 riāls to plough one hectare of land, 300 riāls per hectare for discing and 200 riāls per hour for threshing, and can earn more than 3,000 riāls per day at peak periods of work.

When he is not working with his tractor, Hāji Mohammad divides his time between the land he owns in Sha'bān and his animals. He has three parcels of irrigated land totalling 7,750 square metres, which in 1973 were planted with white beans, as a cash crop, and clover for his animals (see Figure 28) :

Figure 28 Hājī Mohammad: land use, 1973 (1974) (ha.)



	1972	1973	1974
		(ha.)	
Wheat	0.4		0.15
Beans	0.2	0.4	0.15
Clover	0.1	0.35	0.2
Opium	0.05		
Tomatoes			0.24
Gladioli			0.01
Apple trees			0.4
Tabrizi	0.025	0.025	0.025
TOTAL	0.775	0.775	1.175

I recorded one cow, a donkey, five sheep, five goats and three hens in his yard in summer of the same year. These animals are kept mainly for household needs. In addition, Hāji Mohammad buys sheep in late summer for fattening over winter and sale at now ruz. In spring 1974 he sold 150 sheep in Ahvāz and in summer purchased a further 80 ewes in lamb for fattening.

Nonetheless, it was his tractor hire business that was his main source of income and in 1973 he was seriously considering purchasing a second tractor. The two tractors would then provide work for both him and his son, who was 18 years old and keen to work with his father. However, during my second period of fieldwork in Olyā in summer 1974 I found that Hāji Mohammad had decided to postpone this investment, for he was reluctant to burden himself with large repayments at a time of uncertainty about the future of the village in view of its possible expropriation as part of a farm corporation development.

Instead, he had decided that his son should take over work with the present tractor and that he would devote himself to three new ventures in Sha'bān. The first was to purchase 600

week-old chickens in partnership with another small-holder, Qobād Shojā'iān (see Case 7), with the aim of establishing a poultry-rearing operation (see Chapter 5.2.1.). The chickens had been bought for 20 riāls each from a reputable company in Tehrān, vaccinated against Newcastle disease, special feed had been purchased, and a room in his house had been converted for them. Hāji Mohammad argued that another villager, Ardeshir 'Ali Bakhshi, had already successfully demonstrated the profitability of fattening chickens for sale (at 90-100 riāls per kilo) in the neighbouring towns and that in the event of losing his land to a farm corporation this operation could continue unaffected. It was from Ardeshir that he sought advice for his venture. Secondly, Hāji Mohammad followed the example of other farmers by planting 150 fruit trees, mainly apples, on his largest parcel of land. Moreover, he bought a pair of secateurs and pruned them at the correct height of 80 centimetres[1]. Thirdly, he planted a 100 square metre plot of gladioli bulbs in one corner of the orchard as a further effort to intensify his use of the land. This experiment proved successful and Hāji Mohammad now has plans to increase his area of gladioli and other flowers (see Chapter 4.2.2.).

1. Unfortunately, he planted the trees at only 4-5 metre intervals, instead of the recommended 6 metres.

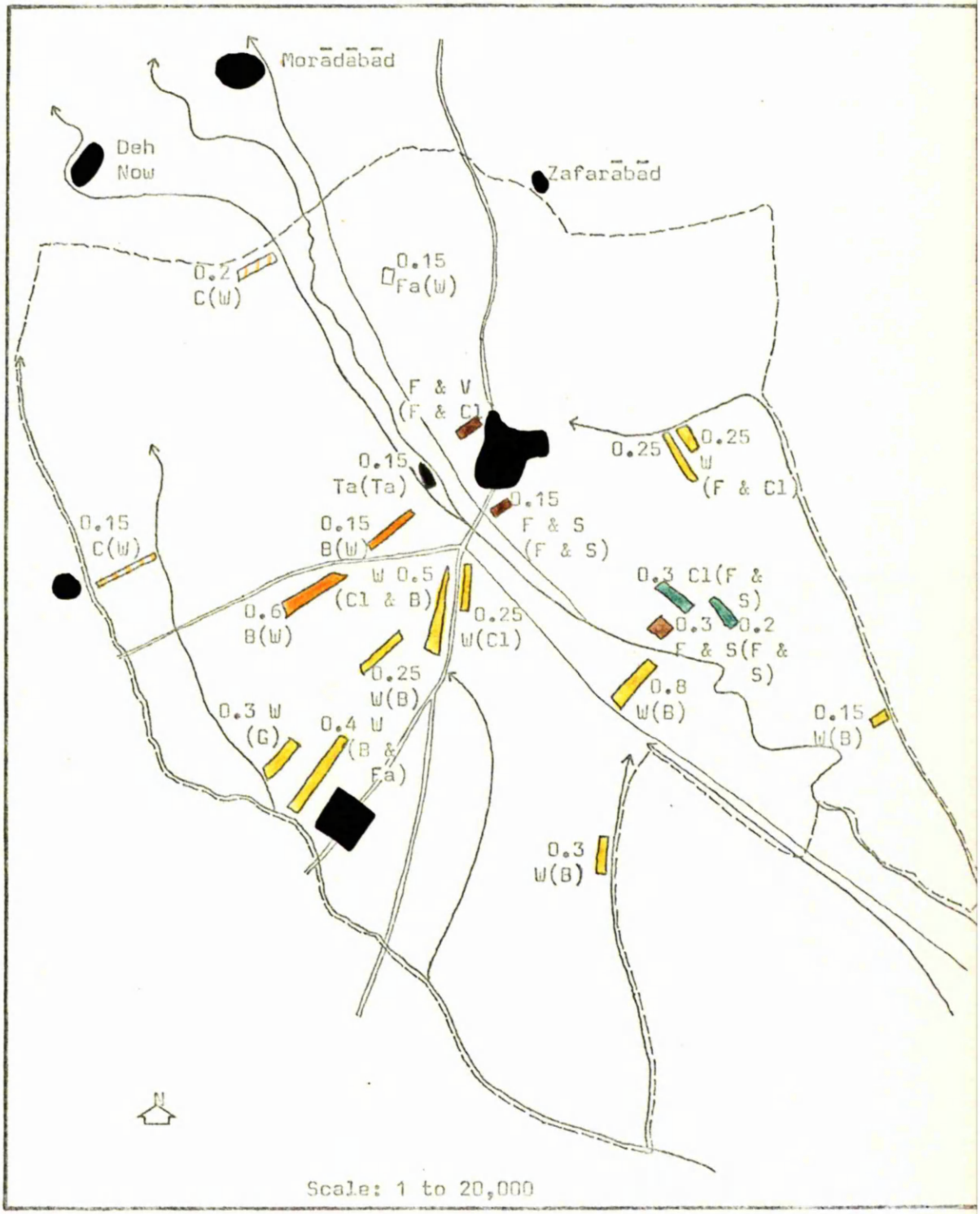
CASE 5 MOHAMMAD ĀQĀ OF BĀBĀ ROSTAM

Mohammad is 62 years of age and has lived in Bābā Rostam all his life[1]. Before land reform in 1965 he worked as a share-cropper for the landlord, Amir Hosein Zafari, but now farms six hectares (one joft) of irrigated land and a small area (one sha'ir) of dry land with his two eldest sons (aged 26 and 21 years)[2]. The older of the two was given the right of ownership to, and thus income from, half the land when he married in 1970, and the younger one shares the income from the other half of the land equally with his father. However, the land is still farmed by the three men as a single unit and, though Mohammad himself at present does little work due to illness and addiction to opium, his decision in farm affairs is usually final.

The irrigated land is divided into 21 parcels, scattered over the village area and ranging in size from 1,500 square metres to 8,000 square metres (see Figure 29). Contrary to what I would have expected, Mohammad finds the fragmented nature of his holding quite acceptable, for he points out that the soil and thus yields vary in different parts of the village. He does not think that his yields would be any higher if the land was consolidated, but does agree that consolidation would make irrigation and the use of machinery easier and also reduce the time spent in travelling to the land.

1. Mohammad is one of the few villagers I met in Olyā who had two wives.
2. His two youngest sons, aged 14 and 11 years, attend secondary school in Nahāvand but also help on the farm, especially during the long summer holiday. Mohammad's two youngest daughters and the wives of his sons make carpets at home; his two eldest daughters are married and live outside the village.

Figure 29 Mohammad Āqā: land use, 1973 (1974) (ha.)



Since land reform Mohammad and his sons have made a determined effort to intensify their land use, improve their husbandry, and thus increase their income from the land. This has been helped particularly by the greater availability and reliability of irrigation water in the Fiazemān and Āsiāb canals since 1969, when responsibility for the control and distribution of water in Olyā was taken over by the Department of Irrigation and taken out of the hands of the landlords (see Chapter 4.1.2.). Whereas a decade or so ago up to half Mohammad and his sons' land would lie fallow each year, only one parcel of 1,500 square metres was left fallow in 1973. Moreover, they have taken advantage of the seed improvement scheme of the Department of Agriculture and replaced their local, low yielding variety of wheat with new, high yielding Omid seed. They have also hired a tractor to plough much of their land in the last few years, although they keep a plough team of two cattle. Finally, they have made increasing use of pesticides and chemical fertiliser, which have only become widely available to the small-holders since 1970. In 1973 they purchased 400 kilos of urea and 900 kilos of diammonium phosphate, and now achieve a wheat yield of 300-400 kilos per jarib, or double their yield in the mid-sixties. Their main complaint about fertiliser is its rising price, even from the village co-operative (see Chapter 6.1.).

However, Mohammad's most important investment, and the clearest indication of the families' desire and ability to develop their holding, has been in the cultivation of sugar beet and fruit trees. In 1973 they planted 0.45 hectares of beet, which gave a good yield of 15 tons, and in 1974 they increased this area to almost one hectare. More important still, however, is their investment in fruit trees. They were amongst the first farmers in Bābā Rostam

to take advantage of the Extension Corps Department's scheme to buy fruit trees at a subsidised price (see Chapter 6.2.). With the help of Matin and Lieb they planted 1.5 jarib of mainly apple trees in 1971, 5 jarib of apricot trees in 1972, and a further one hectare of apple and peach trees in 1974. Hares have damaged the fruit trees, but they now protect the young trunks by tieing plastic or sacking round them. Figure 29 shows that land use on almost all their parcels of land on the same side of the river as the village has now been intensified. As yet the investment in fruit trees has not produced a return, but sales of fruit can be expected to boost considerably the families' level of income in the next few years.

At present agricultural production is directed above all towards the subsistence requirements of the eleven members of the three families. Almost all the wheat produced is consumed and any excess is generally bartered in the village for other foodstuffs; pulses are added to various stews; and clover is fed to the animals. The latter - two cows, two work cattle, two donkeys and six chickens - in turn provide for household and farm needs. But over the last few years the volume and value of production bartered or marketed has grown appreciably. Of the 1973 harvest, I recorded the sale of 1,500 kilos of beans, 900 kilos of chick-peas and 15 tons of sugar beet, which gave the three families a gross income from the land of over 60,000 riāls. It is interesting to note that in 1970 and 1971 Mohammad planted 3 jarib of opium under government licence, and earned over 60,000 riāls from this crop alone (see Chapter 4.2.2.). Other income is derived from occasional sales of carpets, which are made by Mohammad's youngest daughters and his daughters-in-law[1],

1. Three carpets were ready for sale in summer 1973, rolled up in a corner of Mohammad's living room.

from his half-share in 30 head of sheep and lambs (which are being looked after and fattened by a villager in Amirābād), and from non-agricultural work done away from the village by the two eldest sons in winter. In 1973-74 the second son worked in Tehrān for four months and earned 250 riāls a day as a labourer on a building site.

The present prosperity of the families was demonstrated in summer 1974 by the sons, with the help of two hired workers, constructing a new, larger house and hayāt for their father on 500 square metres of their land on the south-east edge of the village.

Looking towards the future, Mohammad himself seemed oblivious to the danger of losing his land to a farm corporation. His sons were aware of this possibility, but were typically fatalistic in their attitudes and replied to my question sardonically that their destiny was in the hands of God.

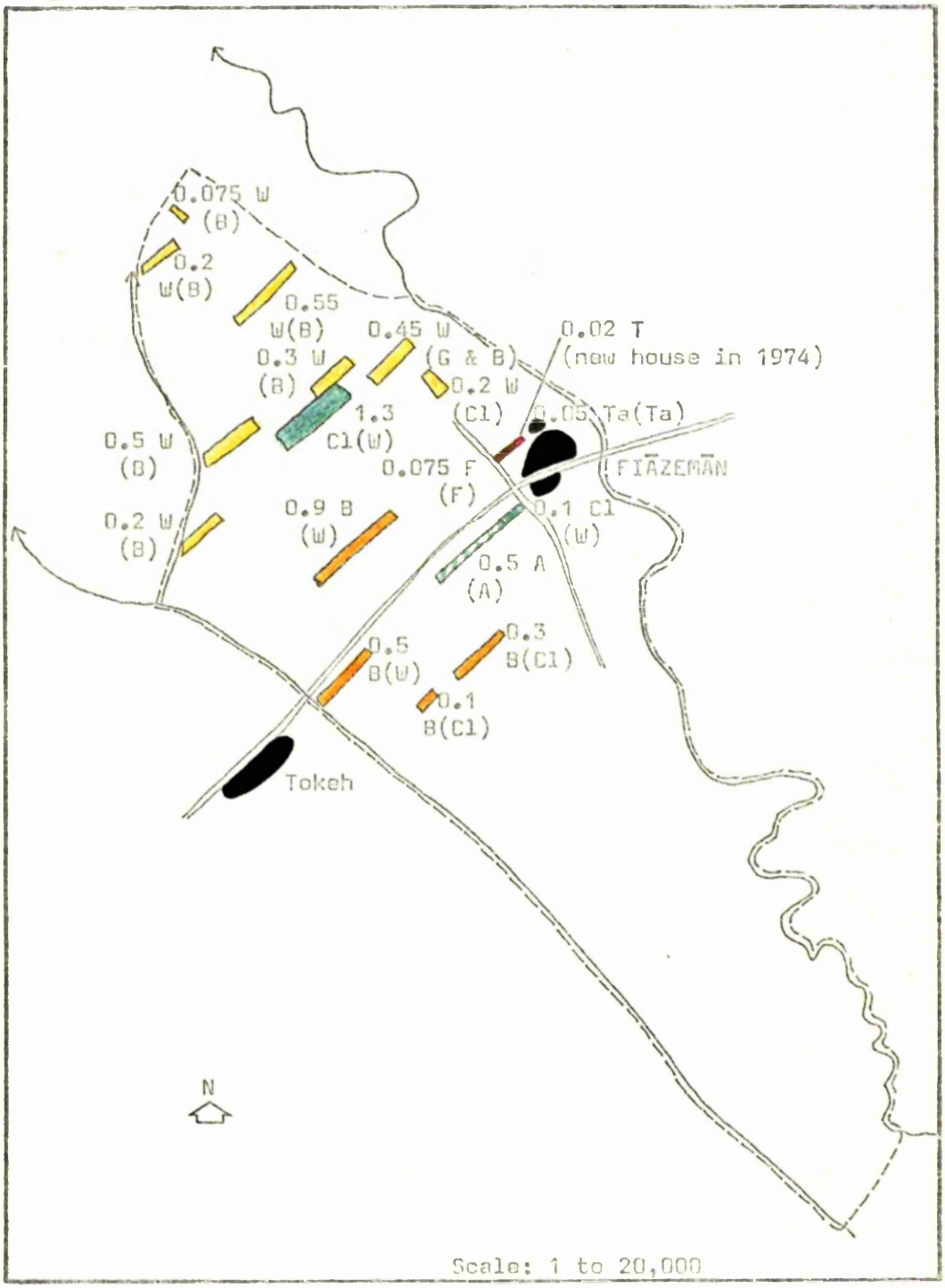
CASE 6 SHĀH 'ALI OF FIĀZEMĀN

Shāh 'Ali is the owner of six hectares of irrigated land, which he received under land reform. Although this is a relatively large holding, it has to support the families of both him and his three married sons, who in fact do most of the work, for their father is now 62 years of age[1]. But land is only one source of their income. In addition, they own a tractor, which they hire out, fatten sheep for sale, and sell carpets which the women of the household make.

The land is divided into 16 parcels (see Figure 30). It is cultivated largely by the eldest son, Majid, but he receives assistance from his brothers when he needs it. Since land reform he has, he says, intensified the use of the land and considerably increased crop yields by making use of the improved supply of irrigation water over especially the last five years, new Cmid seed and chemical fertiliser. Wheat production has kept up with the growing needs of the four families, who now number 19 persons, and beans provide a surplus for sale. In addition, he grows clover and alfalfa for fodder for the family's animals. He has been reluctant to depart from the usual village rotation of wheat and beans, despite some encouragement by extension corpsmen in recent

1. Shāh 'Ali and his three married sons each have a mud-brick house in the same hayāt. The total household consists of the following:
   Shāh 'Ali, wife, son (17 years), and four daughters who are all married to villagers in Fiāzemān and live outside the household;
   1st son, Majid, wife, one child;
   2nd son, Ahmad, wife, five children;
   3rd son, Morād, wife, four children.

Figure 30 Shāh 'Ali: land use, 1973 (1974) (ha.)



years to plant sugar beet and sunflowers. However, in 1973 he did plant and prune a small orchard of mixed fruit trees with their assistance and is considering planting more apple trees.

The second source of income is sheep. This may appear surprising, for Fīāzemān, unlike the other villages in the study area, has no dry land grazing (see Chapter 4.1.3.). But this disadvantage has for many years been successfully overcome by the villagers making an annual seasonal migration with their sheep to a grazing area known as Kuh-e Chālkhār, lying in the mountains about four hours by donkey above the village, where they camp in tents. Sheep rearing follows a definite rhythm. The sheep are purchased in late March-April from nomads in the neighbouring districts of Nurābād or Kangāvar, grazed at Kuh-e Chālkhār until June-July, and then brought down to Fīāzemān to graze on the wheat stubble following the harvest. They are finally stabled in the village over winter, where they have their lambs, before being sold in Ahvāz in the period running up to March 21st, the Persian new year (now ruz), when prices reach their peak. In 1974 I counted 13 tents at the summer camp and 1,200 sheep and goats. Shāh 'Ali had 130 sheep and 10 goats, one of the largest flocks. Most of the work connected with the sheep is done by the second son, Ahmad, assisted by Shāh 'Ali, and the youngest son (aged 17) also helps with grazing the sheep when he is not at school in Nahāvand. Shāh 'Ali told me that his flock had increased in size over the last decade and that in spring 1974 he had sold 150 sheep in Ahvāz for 4,000-5,000 riāls a pair. But he also pointed out that the profit margin on sheep had narrowed over the past year or two and that if this trend continued he would have to reduce his flock.

The third source of income of the family is a BM Volvo 650 tractor and related equipment, which the third son, Morād, works on

Plate 19 Kuh-e Chālkhār: the summer tent camp and pasture land of Fīazemān.

a hire basis in Nahāvand district and in Lorestān. This represents an investment of over 700,000 riāls, but the family seems pleased with the income derived from it.

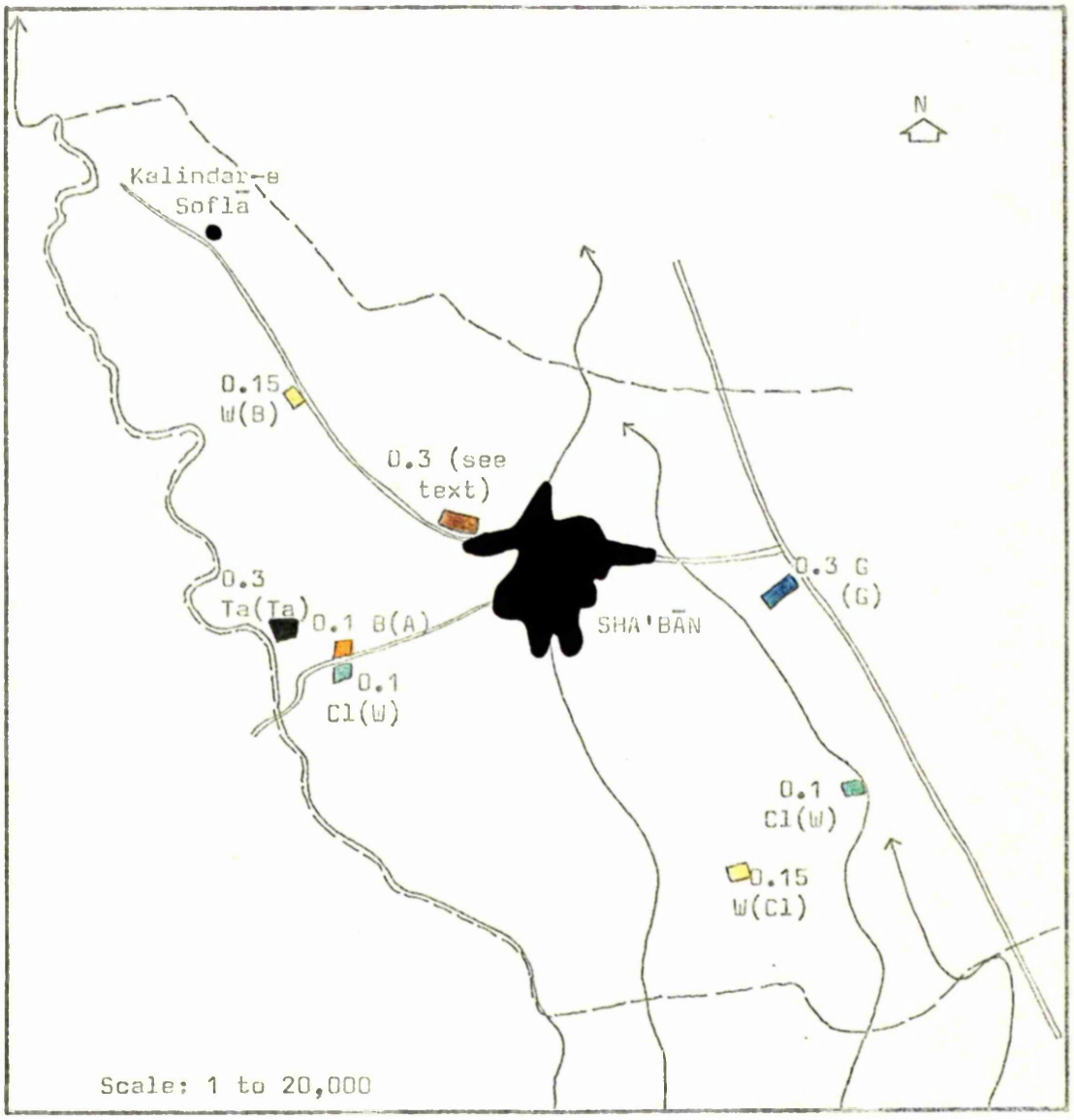
Despite the improved standard of living and economic position of Shāh 'Ali over the last few years, exemplified in 1974 by him moving into a new house, he showed himself deeply concerned about the uncertainty of the future. In particular, he is anxious about recent government moves to license mountain pastures only to the nomadic sheep herders, which would prevent the villagers of Fiāzemān from using what they regard as their traditional grazing area at Kuh-e Chālkhār. For Shāh 'Ali and many other villagers this would be very serious for they have a heavy and long-standing economic dependence on sheep fattening. When I asked him about the possible expropriation of his irrigated land as part of a farm corporation development, he said that he did not properly understand the full implications of this, but that for him any interference by the government was undesirable.

CASE 7 QOBĀD OF SHA'BĀN

Qobād and his brother, Hojat, together farm 1.5 hectares of irrigated land which is divided into eight parcels. Part of this land was inherited from their father after his death about six years ago, two parcels belong to each of their wives, and two parcels belong to their grandmother who they support. Whilst their father was alive and farming the land, the brothers worked in southern Irān and Kuwait for several years in order to both supplement the family income and also to save sufficient money to meet the expense of marriage and establishing their own separate households. Neither brother originally intended to follow in his father's footsteps as a small-holder or indeed stay in Sha'bān, but the unexpected death of their father changed their minds. Responsibility for their mother, grandmother, two brothers and two sisters was put into their hands and they decided to farm the land themselves in partnership and to set up a joint family household in the village.

In the sixties the land had been worked by their father in the traditional manner. He practised the usual rotation of wheat and beans, and also had single parcels of clover, grapes and tabrizi. This is still reflected in the present use of the land by his sons (see Figure 31). However, in the last few years Qobād and Hojat have made a considerable effort to improve their farming and income from the land. In particular they have developed their largest parcel of land - 3000 square metres - which is located only 100 metres from their home just below the village and the Sha'bān canal. At first they followed the example of other more progressive farmers and experimented successfully with gladioli flowers. Then, in 1970, with the assistance of the extension corpsmen from Kuhāni, Matin and Lieb, they planted this parcel with high quality apple and pear trees (with peach trees between them), laid out on a grid pattern. I found the

Figure 31 Qobād: land use, 1973 (1974) (ha.)



intensity of cultivation of this piece of land very pronounced in 1973-74:

	1973 (sq.m.)	1974
Fruit trees	3000	3000
Beans		1000
Tomatoes	1300	750
Potatoes	500	
Other vegetables	200 (onions, squash cucumber)	250 (carrots, onions, cucumber etc.)
Gladioli	1000	1000

The vegetables are sold locally, both in the village and in Nahāvand, and provide a reliable source of income. But it is the gladioli flowers which have become of greater economic significance to the brothers in the last few years. Although the area of flowers is small, Qobād told me that he earned about 17000 riāls from their sale in Tehrān in 1973. This matched the income from a similar area of opium in 1972 and in 1973 was greater than the income from the rest of the land. As stated in Chapter 4.2.2. the cultivation of gladioli requires a great deal of work by the brothers, but they seemed to think this well worthwhile. Moreover, because the parcel of land is so close to their home, no time is wasted travelling and guard may be easily kept on the flowers during the harvesting period. Qobād emphasized the importance to him of the income from gladioli during the period before the new fruit trees reach maturity[1]. In the years to come he plans to move the cultivation of flowers and vegetables to the 1500 square metre parcel further along the track to Kalinder-e Soflā.

Although Qobād and his brother have paid particular attention to a single parcel of land, their other seven parcels have not been neglected. They are used first and foremost to meet the subsistence

1. The peach trees produced their first crop in summer 1974.

requirements of the household and fodder for the animals[1] (see Figure 31), and yields of all crops have increased. This has been achieved by the brothers taking advantage of the availability of new wheat seed, a secure supply of irrigation water, chemical fertiliser and pesticides. For example, in 1973 they purchased 150 kilos of urea, 300 kilos of diammonium phosphate and 150 kilos of ammonium nitrate.

The brothers have also attempted to increase their income from sources other than the land. First, they have continued and expanded their father's practice of fattening sheep during the autumn and winter months for sale in Ahvāz at now ruz. In 1974 they sold 60 sheep. Secondly, and of greater potential economic importance, was their purchase in partnership with Hāji Mohammad (see Case 4) of 600 week-old chickens for fattening in early summer 1974 and their plans to increase this number. If successful, this venture offers the possibility of considerable profit (see Chapter 5.2.1.). Thirdly, the women of the household make carpets for sale and I counted nine completed ones in their home. Finally, Qobād and Hojat are seriously considering buying a small truck which they would hire out locally for the transportation of goods. As yet they remain uncertain of making such a purchase, which would require them to take on a large loan, for the rumour of losing their land to a farm corporation has lessened their confidence. Moreover, in 1974 they still had outstanding debts totalling over 40000 riāls owing to the village co-operative, Agricultural Bank and Bānk-e Sādorāt (see Table 71).

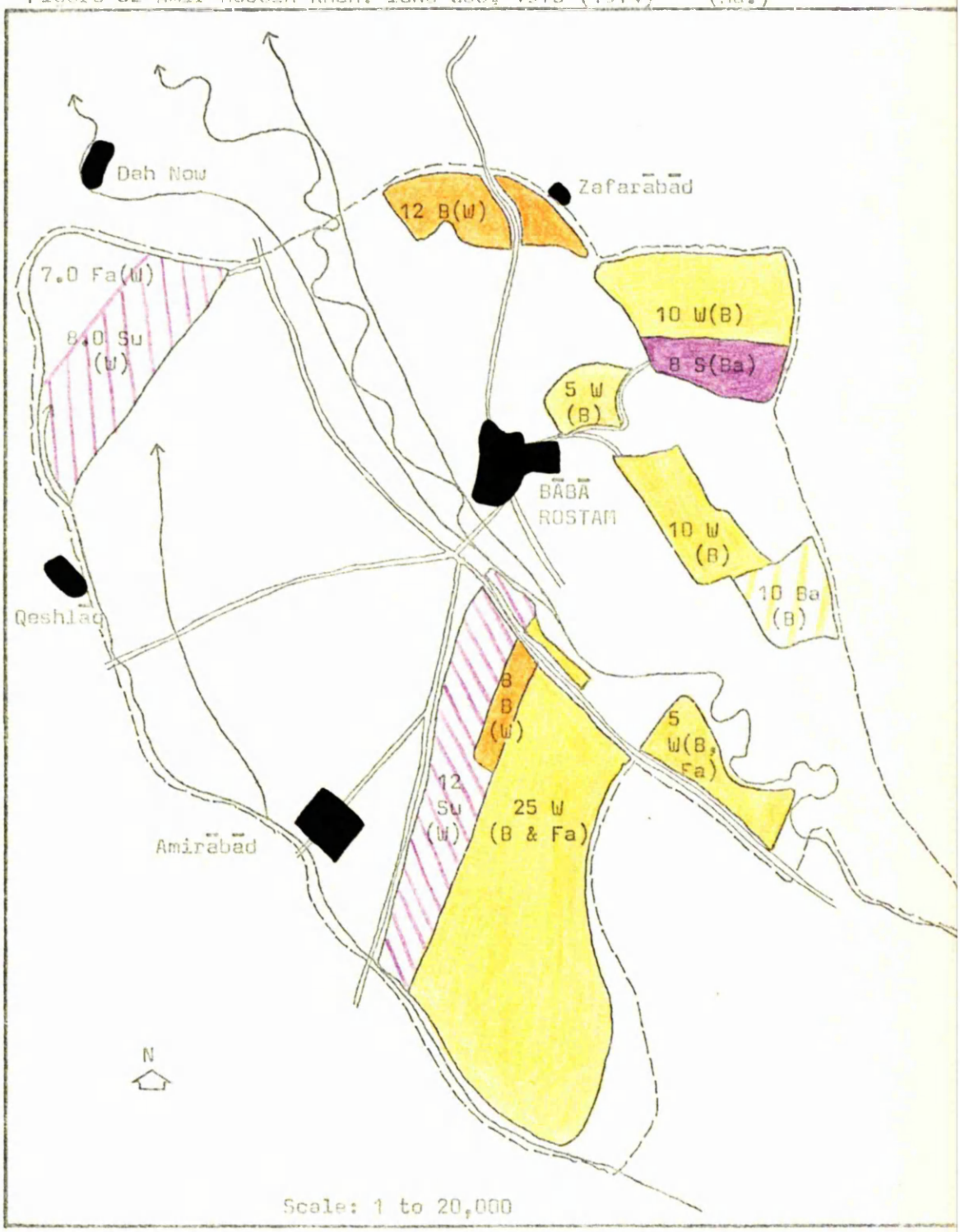
1. One cow and six chickens only in summer 1973, but also sheep in winter.

CASE 8 AMIR HOSEIN KHĀN OF BĀBĀ ROSTAM

Under the second stage of land reform, which was put into practice in Olyā in summer 1965, Amir Hosein Khān, the landlord of Bābā Rostam, chose to divide his land between himself and the share-croppers in the same proportion as the wheat crop had been divided under the crop-sharing agreement (see Chapter 3). Thus, he kept 20 joft (about 120 hectares) and 20 joft was divided among the nasaq holders. Land planted with tree crops was not divided, but remained under the ownership of Amir Hosein, who, however, continued to lease it to the small-holders on a two-thirds crop-sharing agreement in their favour. Amir Hosein also retained two houses in Bābā Rostam, one with a walled garden of 4,000 sq.m. (and a swimming pool), one with a yard, garage, flour mill and rooms for his representative and servants; the houses occupied by the villagers remained in their possession.

As Figure 32 shows, Amir Hosein's land is located in seven blocks, ranging in size from 5 hectares to over 40 hectares. Up until the late sixties much of his land on the southern side of the river lay fallow each year due to the shortage of irrigation water. However, the improvement of the reticulation system since 1969 (see Chapter 4.1.) has made it possible for a reliable supply of water to be delivered to land below even the far end of the Fīazemān canal and fallowing is now unnecessary. Land use in 1973-74 was based on an annual rotation of wheat and beans, just as before land reform, but his poor yields of these crops contrasted sharply with the extremely high yields of the sample of 51 small-holders I questionned in the eleven villages (see Chapter 4.2.). Amir Hosein shows little interest in fodder crops for he has no sheep or goats and his five cows are looked after by two villagers on a form of crop-sharing agreement, whereby they feed the animals and take all

Fioure 32 Amir Hosein Khān: land use, 1973 (1974) (ha.)



produce[1], but most provide Amir Hosein with his dairy requirements when he is in the village. His attempts to introduce alternative summer crops have largely failed. As mentioned in Chapter 4.2.3., his 20 hectares of sunflowers in 1973 produced a very poor yield and in 1974 his 20 hectares of sugar beet failed to germinate successfully and was ploughed in and the land replanted with beans. Even his yield of opium in 1972 was much below the average for Bābā Rostam.

Land use:

	1973 (ha.)	1974
Wheat	55	55
Barley	10	5
Beans	20	30
Sugar Beet	8	20
Sunflowers	20	-
Fallow	7	10
	120	120

Although Amir Hosein's blocks of land are scattered over the village area, he has over the past decade sufficiently improved the tracks to these blocks to allow access by farm machinery. But the land is not worked intensively by tractor, combine harvester and other machinery, as is the case on the estates of several former landlords I visited in 1972 in other parts of Hamadān province. Wheat cultivation is partially mechanised: ploughing is done by Amir Hosein's own Massey-Ferguson tractor; the seed is sown and the growing wheat irrigated by hired labourers paid in cash or kind; and the harvesting since 1969 has been carried out by a hired John Deere combine at a cost of 8% of the grain. Beans, on the other hand, are cultivated by the villagers on a form of pre-land

1. Amir Hosein also has the right to any calves born.

reform crop-sharing agreement, whereby Amir Hosein ploughs the land by tractor but all other work is done by the labourers who receive one-third of the crop as their share.

Amir Hosein's low yields and poor standards of husbandry are due in large part, I suggest, to his outdated method of farm management. As in pre-land reform days he is still an absentee in Tehrān for much of the year[1], but, unlike the landlord of Jahānābād, he has not given his representative the incentive or power to make decisions which are necessary to ensure the land is well cultivated (see Case 3). His representative is in fact a "landless" villager, with little technical expertise, and acts more as a silent watch-dog than an active overseer. Amir Hosein dictates how the land is to be cultivated on his two annual visits to the village in spring and late summer, but he too has little technical knowledge. Thus, the important day-to-day decisions of irrigation, weeding, fertiliser application and pesticide control are largely neglected. The crops and land display only too clearly this neglect: low yields, a serious problem of wild oats, soil erosion, tracks in disrepair, and gulleys caused by the excessive use and runoff of irrigation water.

Yet Amir Hosein shows little interest in making improvements. For him the land remains primarily a symbol of social prestige[2], and the income it produces is of secondary importance[3]. Moreover, he

1. His two sons were sent to school in England, attended Salford University, and now work as engineers in Tehrān.
2. His Mercedes Benz car might be similarly viewed.
3. Amir Hosein was not prepared to discuss his financial affairs. Thus, I have no firm data concerning his agricultural sales or income. His crops were largely sold in Nahāvand to one or other of the major merchants.

receives a considerable income from his share of the Zafari family's land in neighbouring Soflā sub-district, which is still reputed to amount to 1,000 hectares, and he owns property in both Nahāvand and Tehrān. I asked him about the threat of a farm corporation and, although he was noncommittal, he gave the impression of not being willing to give up his land without a fight.

Tabulated data from the questionnaire surveys of the seven small-holders

Table 61 Number of permanent household members, 1974

	Case						
	1	2	3	4	5	6	7
Father	1	1	1	1	1	1	1
Wife	1	1	1	1	2	1	1
Son	3	1	3	5	4	4	
Daughter	3	2	2	1	2		2
Daughter-in-law					2	3	
Brother		2					2
Sister-in-law		2					1
Nephew		4				5	3
Niece		3				5	1
Mother		1					1
Sister							1
Grandmother							1
Total	8	17	7	8	11	19	14

Table 62 Number and type of rooms in household, 1974

	Case						
	1	2	3	4	5	6	7
Living rooms	2	7	5	2	1	2	3
Work rooms	2	4	4	2	1	2	3
Stables	1	1	2	2	2	4	3
Underground stable		1				1	
Area of enclosed yard (sq.m.)	300	300	400	200	150	400	400
Garage for tractor				1		1	
Mud and mud-brick house	x	x		x	x	x	x
Mud and fired brick house			x				
New house built (or rooms added) since 1970			x		x	x	

Table 63 The land, 1973 (ha.)

	Case 1	2	3	4	5	6	7
Total land area	2.8	18	12	0.775	6.4	6.3	1.5
No. of parcels	8	19	19	3	22	16	8
Irrigated area	2.8	8	12	0.775	6	6.3	1.5
No. of parcels	8	17	19	3	21	16	8
Deimi area	2sha'ir (uncultivated)	10 (2ha. cultivated)			0.4		
No. of parcels					1		
Largest parcel of irrigated land	0.5	1.4	2.7	0.4	0.8	1.3	0.3
Smallest parcel of irrigated land	0.075	0.1	0.1	0.15	0.15	0.05	0.1

Table 64 Number of animals, 1973 (1974)

	Case 1	2	3	4	5	6	7
Dairy cow	2 (2)	4 (4)	5 (4)	1 (1)	2 (2)	3 (3)	1 (1)
Work cattle		2 (2)			2 (2)	2 (2)	
Calf	- (1)	3 (5)	4 (4)		- (1)		- (1)
Horse						1 (1)	
Mule						1 (1)	
Donkey	1 (2)	2 (2)	3 (2)	1 (-)	2 (2)	1 (1)	
Sheep (& lambs)				5 (80)	15 (-)	150 (130)	60 (?)
Goat				5 (4)		7 (10)	
Hen	5 (-)	2 (2)	6 (6)	3 (300)	6 (-)	5 (4)	6 (300)
Bee hive						1 (1)	

Table 65 Crop areas, 1973 (1974) (ha.)

	Case 1	2	3	4
Irrigated wheat	1.22 (1.05)	2.0 (2.9)	4.05 (5.95)	- (0.15)
Beans	1.3 (0.72)	1.625 (1.3)	3.95 (5.05)	0.4 (0.15)
Chick-peas	- (0.45)	1.35 (-)	3.0 (-)	
Clover	0.2 (0.5)	1.8 (0.65)		0.35 (0.2)
Alfalfa			- (0.2)	
Sugar beet		0.4 (2.25)	0.2 (-)	
Tomatoes			- (0.17)	- (0.24)
Other vegetables		0.5 (0.6)		
Gladioli				- (0.01)
Fallow			0.17 (-)	
Grapes	0.075 (0.075)	0.05 (0.05)	0.2 (0.2)	
Fruit trees	- (0.45)	2.05 (2.05)	0.2 (0.2)	- (0.4)
Tabrizi		0.35 (0.35)	0.4 (0.4)	0.025 (0.025)
Deimi wheat		1.0 (-)		
Chick-peas		1.0 (2.0)		
Total	2.795 (3.245)	12.125 (12.15)	12.17 (12.17)	0.775 (1.175)

	5	6	7
Irrigated wheat	3.45 (1.25)	2.475 (2.8)	0.3 (0.2)
Beans	0.75 (1.95)	1.8 (2.025)	0.1 (0.25)
Chick-peas	0.35 (-)		
Clover	0.5 (1.2)	1.4 (0.6)	0.2 (0.15)
Alfalfa		0.5 (0.5)	- (0.1)
Sugar beet	0.45 (0.95)		
Potatoes			0.05 (-)
Tomatoes		0.02 (-)	0.13 (0.075)
Other vegetables	0.2 (-)		0.02 (0.025)
Gladioli			0.1 (0.1)
Fallow	0.15 (0.2)		
Grapes	- (0.3)	- (0.25)	0.3 (0.3)
Fruit trees	0.65 (1.6)	0.075 (0.075)	0.3 (0.3)
Tabrizi	0.15 (0.15)	0.05 (0.05)	0.3 (0.3)
Deimi wheat	0.4 (-)		
Total	6.65 (7.6)	6.32 (6.3)	1.8 (1.8)

Table 66 Farm implements and machinery, 1974

	Case						
	1	2	3	4	5	6	7
Wooden threshing machine	1	1	1		1		
Hand sickle	2	2	5	2	2	2	2
Spade	2	2	2	1	2	1	2
Pick	1	1	2		1	1	1
Wooden plough	1	1	2		2	1	
Yoke and draw bar	1	1	2		1	1	
Winnowing fork	2	1	4	1	2	2	2
Net for wheat	2	2	3	1	2	1	2
Donkey saddle-bags	1	2	3		2	1	1
Donkey panier	1	1	3		1	1	1
Two-person spade	1	1	2	1	1	1	1
Donkey saddle	1	1	3	1	1	1	1
Grain sieve	1	1	2	1	1	1	1
Hand trowel	1	1	2	1	1	1	1
Tractor				1		1	
Mechanical thresher				1		1	
Disc				1		1	
Metal plough				1		1	
Pruning shears/ secateurs		1		1	1		
Back-pack sprayer		1					

Table 67 Husbandry, 1974

	Case 1	2	3	4	5	6	7
Hires a tractor	x	x	x	(uses his own)	x	(uses his own)	x
Uses pesticide	x	x	x	?	x	x	x
Borrows back-pack sprayer	x	(uses his own)	x	?	x	x	x
Uses Omid wheat seed	x	x	x	x	x	x	x
Uses chemical fertiliser	x	x	x	x	x	x	x
Uses natural fertiliser	x	x	x	x	x	x	x
Planted new fruit trees	x (1974)	x (1972)	x (1971)	x (1974)	x (1971, 72 & 74)	x (1973)	x (1970)

Table 68 Miscellaneous information

	Case 1	2	3	4	5	6	7
Bank account	x	x	x	x	x	x	x
Carpet-making	x	x	x	x	x	x	x
No. of carpets in house	4	14	20	5	6	3	9
Member of co-operative society	x	x	x	x	x	x	x
Purchased land since 1970		x					
Hires other labour	x	x	x	x	x	x	x

Table 69 Gross income from the land, 1973 (1352) harvest

	Case 1	2	3	4
Wheat	1200 kilos (8000) rials	6000 (42000)	6000 (43200)	
Beans	2400 (48000)	6000 (120000)	3000 (58000)	1200 (24000)
Chick-peas		900 (18000)	1200 (24000)	
Sugar beet		10 tons (15000)	2½ tons (3750)	
Clover		900 (3600)		
Potatoes		1200 (4000)		
Straw	1500 (3000)	4500 (4500)		
Total	(59000)	(207100)	(128950)	(24000)

	5	6	7
Wheat		900 (5400)	
Beans	1500 (28000)	2400 (42000)	450 (9000)
Chick-peas	900 (16800)		
Sugar beet	15 tons (22500)		
Gladioli			- (17000)
Total	(67300)	(47400)	(26000)

Note: The accuracy of these figures should be viewed with reserve.

Table 70 Gross income from sources other than land, 1973 (1352)

(riāls)

	Case 1	2	3	4	5	6	7
Dairy produce	400 per week in winter	x	x	x		x	
Carpets	50000 (3 sold)	x	x (2 sold)	x (1 sold)	x	x	x
Non-agricultural employment		x			x		x
Rent from land		7000 per month					
Landlord's representative			x				
Tractor hire				x		x	
Sheep				150 sold		150 sold	60 sold
Wool						x	

Table 71 Value of loans received in 1973 (1352) (riāls)

	Case 1	2	3	4	5	6	7
Institutional:							
Village co-operative	15000	20000?	20000?	15000	13000	11000	10000
Nahāvand Agricultural Bank	30000	80000?	?	20000	30000	50000	18000
Other			?	50000			15000
Non-institutional:	60000	?	?	50-100000	60000?	140000?	?
Total	105000	150000?	?	150000?	103000?	200000?	43000?

Note: ? = figure is uncertain

CHAPTER EIGHT CONCLUSION

This thesis has been concerned with agrarian change in eleven villages in Olyā sub-district, Western Irān, and in particular with the changing economic and social circumstances of the small-holder population since the commencement of land reform in 1962. It should be noted that no attempt has been made to relate this case study of Olyā to Irān as a whole, for generalisation in the Irānian context is almost invariably misleading. Moreover, Olyā is atypical in that land relative to water is in short supply.

The thesis has shown that the redistribution of land ownership under the first two stages of land reform in 1962 and 1964 has freed the rural population from the burden of landlord domination and insecurity of tenure and created a far more independent and self-reliant population with aspirations and a degree of individual enterprise it had never before possessed. It was to be seen, for example, in the great demand for education, for increased transport to the neighbouring towns, for household goods, for new machinery and for improved seed. However, between the farm population and the small group of landowners, the former landlord class, who were still absentee for much of the year, there remained not surprisingly a wide social and economic gulf.

The effects of land reform and the expanding local economy are difficult to measure accurately in terms of increased yields or income per head, but everywhere the land had been transferred to the former share-croppers it was under more intensive cultivation because it was now regarded as their own. Furthermore, there was a greater diversification of crops under cultivation than ever before, a breakdown of the traditional cropping pattern, a growth in cash-cropping and a steadily developing interest in taking advantage of the wealthy urban markets both locally and as far

away as Tehrān and Esfahān. In this way direct farm incomes have risen while at the same time new employment opportunities in trade, transport and other services have been produced which have to some extent relieved direct employment pressure on agricultural resources. It is true that the small-holders have not yet recognised sufficiently the need to consolidate their holdings to motivate them to do a great deal about it themselves. However, a number of the more progressive farmers were demonstrating an interest in consolidation in 1974, as the advantages for mechanization and increased use of fertiliser and pesticides of larger parcels of land became apparent. In due course, the demand for consolidation will, in all probability, spread.

Throughout the study area there were signs of great activity by the villagers in building better houses for themselves, clear evidence of an improvement in social and economic conditions. Before land reform in those villages owned by landlords few dared to undertake activity of this kind. Now, using local raw materials and surplus seasonal labour, they were exerting extra effort to raise their standard of living. This activity, moreover, has not been confined to housing; there has also been an impressive communal effort for the provision of public amenities such as schools, baths and piped drinking water. The number and range of shops has similarly grown.

These changes have been helped by government expenditure and encouragement in a number of important and closely connected ways. First, there was the stimulus of the co-operative movement, which was seen by the small-holders as the means of establishing their social and economic independence, and in particular of the short-term credit which it provided. Secondly, irrigation water control under government administration has become more efficient

and the fair distribution of water has been assured. Thirdly, there was a considerable improvement in communications and the provision of cheap transport. The effect of mobility afforded to the villagers by the motor bus is manifest for all to see. Fourthly, village social services were expanded. Fifthly, there was the encouragement and assistance of a small but dedicated number of extension workers in the villages. Sixthly, the growing demand for such specialised produce as flowers and fruit, in addition to the more customary and basic grain, pulse and vegetable crops, in turn produced the incentive for considerable improvements in quantity and quality of these crops.

It is true that land reform did not affect all the villagers equally; those who received legal ownership of land in the early sixties clearly received more favourable treatment than the class of agricultural labourers (barzegar) who did not hold the right to receive land. The latter indeed were only indirectly affected by land reform. Despite this I found that they were far from discontented with their position. Agricultural wages had risen and the number of opportunities for more remunerative employment outside agriculture, especially in the services sector, had increased.

For the former landlords the major impact of land reform was to restrict them politically. Economically, however, they had suffered little, being legally permitted to retain large consolidated tracts of often the best land. Their position as the major single producers of a marketable surplus and social superiority by way of spending power ensured their continued economic affluence and social influence. Yet they have shown themselves little interested in taking an active role in the management of their farms, and continue to employ representatives in the traditional manner. Indeed, the

large landed proprietors have developed the potential of their land far less than the small-holders.

This thesis has repeatedly emphasized the degree of confidence and individual enterprise of the farmers of Olyā and their willingness to take advantage of circumstances only when they can see that it is in their best interests to do so. It is therefore ironic that improvements in their social and economic welfare have shown themselves most clearly during the last 4-5 years when changes in government policy with regard to land ownership, the rural co-operative societies, credit and prices have emerged which would appear to threaten the stability on which this progress has rested. First and foremost, the likely location of a farm corporation in Olyā, centred on the village of Sha'bān, under the first step of the third stage of land reform, consequent upon the demand of the state for increased agricultural output, has given rise to an air of uncertainty which has reduced investment. Secondly, the co-operatives, which were intended to establish the independence of the farmers, now appear more an arm of the government and a vehicle for the collectivization of agriculture. Thirdly, the small-holders have seen an increasing proportion of low interest, institutional credit be directed by the government to large agricultural enterprises, whether private farms or farm corporations, and their own credit needs neglected. Similarly, marketing assistance has been directed towards the small number of large producers to the exclusion of the majority of the farm population.

The question must be asked whether the establishment of a farm corporation, with its aims of increasing food production and a more efficient agriculture still unproved, can compensate for the displacement of an established, independent and increasingly sophisticated and prosperous rural population, with high production

levels per unit area of land and with an increasing diversification of non-agricultural sources of income. Certainly the Arān farm corporation in Khezel sub-district has had a disruptive impact. This is not to say that the authorities are not interested in the welfare of the people of Olyā, but that an intrinsic incompatability exists between the self-help principles of land reform, as conceived by Dr. Arsanjāni, and the economic intervention, with an accompanying desire for quick results, underlying the farm corporation, as conceived by Dr Valiān. Imposing change is very different from encouraging change.

What is needed rather, after the radical changes of land reform, is a period of stability in which the rural population, in particular the land-holding, agriculturally-dependent community, can gain confidence. At the present time this would seem particularly important, for many individuals are recognizing the need for longer-term investment in land improvement, the consolidation of their holdings, the purchase of more land and equipment if the rate of increase in productivity and agricultural income is to be maintained. However, the threat of losing their land and the fear of forfeiting the fruits of their endeavours has so far held them back from actually implementing most of their plans. It is therefore suggested that the government would do better to invest in the growing class of village commercially orientated farmers, both small and large alike, who would push ahead with their innovations if only they were provided with concrete signs of government confidence in them in the form of a better marketing system and if more credit and services were channelled their way.

APPENDIX 1 EXPLANATION OF DATA COLLECTION

In May 1973 a census of all households owning land in the eleven villages under study was carried out[1]. It excluded the large landed proprietor class (the former landlords) but made no distinction between the former share-croppers, the peasant proprietors and others who had acquired land since land reform. From the census list for each village a 5% random sample of small-holders was chosen using a random numbers table (see Table 72). For each of the small-holder households a questionnaire concerning farm and family was implemented (see Table 73). In summer 1973 the questionnaire was completed by a member of the Extension Corps Department who was both the main extension worker in the Pilot Villages Project and also a villager of Kuhāni by birth. In 1974 it was repeated by myself. It should be noted that six of the farmers had already been questionned in 1971 and these formed a suitable basis for checking inconsistencies, of which many were found and corrected.

The questionnaire was prepared initially by the Shell Agricultural Studies Centre at Borgo a Mozzano in Italy[2]. It was adopted by the Irānian Agricultural Extension Service in 1970, modified slightly and translated for use in the 155 pilot village projects established by 1973.

In addition to questionnaire implementation, land use maps of each small-holding were drawn up with the sample farmers'

1. Census figures already existed for 1966 and 1972, but it was felt that in view of the lack of a complete cadastral survey in Olyā their accuracy should be checked and the figures revised (see Table 72).
2. Virone, L.E. "A practical approach to rural development", page 16-17 (1969)

Table 72 Total number and sample number of small-holder households in the eleven villages under study

Village	1966 Census figure	1972 Extension Department figure	1973 Fieldwork figure	5% sample number
Gol-e Zard	36	35	42	2
Raziābād	23	30	25	1
Kuhāni	176	154	160	8
Jahānābād	64	100	119[1]	6
Bābā Rostam	63	90	72	4
Fiāzemān	47	43	47	2
Sha'bān	225	180	204	10
Qal'eh-e Qobād	98	85	82	4
Beyān	120	120	115	6
Bābā Qāsem	87	100	106	5
Milāb	58	70	55	3
Total	997	1007	1027	51

Source: Fieldwork, 1973-74

Note: 1. The figure for Jahānābād has increased greatly since 1966 because of the influx of the villagers of nearby Kalindar-e Bālā after the flood of 1971 destroyed their village.

participation in both 1973 and 1974 using air photographs. Much data could thus be checked on the ground and informally in conversation with the farmers while they took me to their parcels of land. Furthermore, during fieldwork personal visits were made to all households included in the sample and data checked where possible by sight. Thus, it is hoped that inaccuracies have been limited to a minimum. However, it should be emphasized again that in a Persian village it is very difficult to arrive at the truth.

It should be pointed out that perhaps the most difficult problem planners in the agricultural sector in Irān face is the shortage of reliable data at the individual farm and village level. No easy solution to this problem is offered here. Rather it is hoped that by showing the value of intensive data collection in improving our understanding of one small area, other similar surveys will be encouraged elsewhere in rural Irān.

Table 73 FARM AND FAMILY SURVEY

Farmer ..... Village ..... Shahrestān ..... Province .....

Agricultural year .....

Data collection:

Information collected verbally .....

also based on written comments .....

also based on account books and other documents .....

Date of survey .....

Surveyor .....

Total no. of pieces of land ..... Total area .....

No. of irrigated pieces ..... Area .....

No. of deimi pieces ..... Area .....

Minimum piece of irrigated land .... Maximum piece .....

Minimum piece of deimi land ..... Maximum piece .....

Other land .....

Number of members of the family .....

Membership of co-operatives and other associations .....

FAMILY

Name and surname	Relationship to head of household	Birth		Employment	Education	Marital status
		Place	Year			
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Wages

Salaries paid to hired workers: men no. of days ..... at =

women no. of days ..... at =

children no. of days ..... at =

TOTAL:

The land and fixed assets

Category	Class and description	Area (Ha. etc.)	Value
1. Type of dwelling			
2. How many rooms for:			
People			
Animals (stable)			
Storage			
3. Size of yard			
4. Size of kitchen garden			
5. Trees and other perennial crops:			
Grapes			
Tabrizi			
Fruit			
6. Cropland: Wheat			
Barley			
Pulses			
Total area and value			

Livestock

Category	Breed	Number	Value
Cattle: Milking cows			
Bulls			
Calves - over 1 year old			
Calves - under 1 year old			
Horses			
Mules			
Donkeys			
Sheep			
Goats			
Poultry			
Bees			

TOTAL VALUE:

Machinery and equipment

Type	Number	Make	Special characteristics	Horse power	Year of purchase	Value
....						
....						
....						
....						
....						
TOTAL VALUE						
Value per hectare						

Farm production

Products	Total production	Saleable production	Price per unit	Value of saleable production	Family consumption	Value of family consumption
....						
....						
....						
....						
....						
TOTAL VALUE						

Farm expenditure

Items	Unit of measure	Quantity	Price per unit	Total expenditure
Expenditure on crop production				
Seed				
Chemical fertilisers				
Organic manure				
Pesticides				
Hiring of machinery				
Planting trees				
Expenditure on livestock				
Fodder				
Feed-stuff				

(Farm expenditure contd.)

Items	Unit of measure	Quantity	Price per unit	Total expenditure
Veterinary expenditure				
Servicing and artificial insemination				
Restocking				
Others				
Expenditure on machinery and equipment				
Fuel				
Lubricants				
Repairs and maintenance				
Spare parts				
Others				
Insurance on:				
Buildings				
Livestock				
Produce				
Taxes and contributions				
.....				
Other expenses				
Electricity				
Irrigation water				
Processing of produce				
Transport & visits				
Repair and maintenance of:				
Farm buildings				
Road & other farm works (irrigation, drainage, etc)				
		TOTAL VALUE=		

Farm debts outstanding at the end of the year

Nature and conditions of debt	Total amount	Annual repayment (including interest)
.....		
.....		
.....		
TOTAL =		

Family expenditure

Item	Annual expenditure
Purchased food	
.....	
.....	
Fuel	
Lighting	
Clothing	
Medical	
Education	
Transport and visits	
House repairs and maintenance	
Household and furnishing	
Social events	
Personal taxes	
Member fees for associations etc	
Other	

Family debts outstanding at the end of the year

Nature of debt	Total amount	Annual repayments (including interest)
.....	.....	
.....	.....	
TOTAL =		

Family earnings outside farm

Source of earning	Annual earnings
.....	
.....	
.....	
TOTAL =	

Appendix 2 Breakdown of the total village population of Olyā

Village	Population	Number of households	Number of kms. from main road
Abolfathābād	160	24	2
Ardeshirābād	124	23	9
Alvand Kamar	137	24	1
Amirābād	149	28	4
Bābā Rostam	765	147	3
Bābā Qāsem	866	159	3
Bān Sareh	192	40	8
Borj-e Esmail	x	x	3
Borj-e Hāj Āqā Javād	x	x	3
Borj-e Zir Juraj	13	3	3
Borj-e Qahremān	x	x	3
Borjak	454	81	15
Beyān	862	168	3
Panbeh Dar	59	16	6
Tāz-e Nāb-e Soflā	140	26	9
Tāz-e Nāb-e Olyā	186	38	9
Tāz-e Nāb-e 'Ali Mohammad	124	24	4
Tāz-e Nāb-e Mohammad	100	17	9
Tāz-e Nāb-e Vostā Bāqer	251	50	8
Torkān Torkān	22	4	3
Taqiābād	107	19	5
Tokeh	285	50	3
Ja'farābād	255	47	2
Jahānābād	752	155	-
Hājiābād-e Milāb	107	21	5
Hoseinābād-e Bābā Qāsem	166	29	-
Khājeh Hoseini	36	8	3
Kheyr Qoli	25	5	3
Dar-e Ebrāhim	453	85	7
Deh Choqā'i	338	65	2
Deh Heydar	292	51	9
Deh Now-e Soflā	210	34	2
Deh Now-e Olyā	186	32	4
Rāvand-e Sabzād	50	9	4
Rāvand-e Soflā	72	15	4
Rāvand-e Olyā	85	13	4
Rāvand-e Vostā	32	6	4

Village	Population	Number of households	Number of kms. from main road
Raziābād	237	47	-
Zamānābād	31	5	-
Sālārābād	186	34	6
Sorkh Kandi	99	21	3
Sefid Khāni	614	111	1
Sohrān	765	137	12
Shāterābād	121	21	1
Sha'bān	1499	308	-
Shahvarābād	20	2	3
Shishangeh	10	1	3
Oshvand	609	118	10
Fiāzemān	436	78	2
Qeshlāq-e Bābā Rostam	70	12	4
Qal'eh-e Bārudāb	37	4	5
Qal'eh-e Zorrati	102	21	9
Qal'eh-e Qobād	711	145	1
Kaftar Haleh	19	6	2
Kaleh Mār-e Soflā	117	27	9
Kaleh Mār-e Olyā	301	62	11
Kalindar-e Soflā	42	7	2
Kalindar-e Olyā	86	16	2
Kuhāni	1427	273	-
Gāmāsb	639	127	10
Gerde Cham	80	17	2
Gorg	157	23	9
Gorg Heydar	314	57	10
Gol-e Zard	276	56	-
Mohammad Gap-e Soflā	78	15	5
Mohammad Gap-e Olyā	145	29	5
Morādābād	211	42	3
Milāb	610	111	¼
Nesār	328	63	5
Varāineh	642	128	6
Vesht	558	102	6
TOTAL	19632	3742	

Note: x - not available

Source: "Village Gazetteer", Statistical Centre of Irān (1966)

Appendix 3 Average market prices for crops in Olyā sub-district

(riāls per kilo)

	Summer 1973	Summer 1974
Wheat	6-8 (2000 rls/kharvār)	12-16
Barley	6 (2000 rls/kharvār)	8
Straw	300 rls/kharvār	800 rls/kharvār
Beans	20-30	15-20
Chick-peas	30	25
Clover	2000 rls/kharvār	3000 rls/kharvār
Sugar beet	1500 rls/ton	2500 rls/ton
Potatoes	3-4	6-8
Tomatoes	3-5	3-5
Cucumber	150-200 rls/100	200-300 rls/100
Gladioli	5-10 rls/bloom	5-10 rls/bloom
Grapes	3-6	3-6
Apples	6-20	6-20

Source: Fieldwork, 1973-74

GLOSSARY

āb-e gusht - a thin soup, containing potato and meat.

ābi - irrigated (farming, land).

ābiār - village official in charge of irrigation.

ābiāri - irrigation.

ākhund - member of the religious classes (mollā).

ambār - storehouse, storage room.

anjoman-e deh - village council.

arbāb - landlord, landowner.

ārshir - five pronged, wooden fork used in threshing and winnowing.

a'yān - tangible property; in popular usage the house, outhouses and trees of a holding as distinct from the land itself, which is known as the 'arseh.

bakhsh - sub-district.

bālā - upper.

Bānk-e Melli-e Irān - the major clearing bank in Irān. Other banks include Bānk-e Sāderāt and Bānk-e Sepah.

barzegar - cultivator, agricultural labourer (not a share-cropper).

bāzār - the market.

bil - spade.

bokhāri - stove.

bongāh - department, institute.

chādor-e shab - light veil.

dabestān - primary school.

dabirestān - secondary school.

dāng - one-sixth part of any piece of real estate.

dās - hand sickle.

dās-e bozorg - scythe.

dashtbān - village official whose duty it is to protect the village fields from damage and theft.

deh - village.

dehestān - sub-district.

deim - unirrigated (dry) farming.

deimi - unirrigated (dry).

dugh - kind of buttermilk.

emām - the leader of the Shi'i community.

emāmzādeh - shrine.

fakhri - type of grape.

farmāndāri-e koll - governorate.

fārsi - Persian language.

gāvband - yoke of oxen; the owner of the oxen in a crop-sharing agreement.

gāv-e āhan - animal-drawn plough.

gāv-e kār - work cattle, work-team.

giveh - shoe, the uppers of which are made of a cotton weave and the soles of rubber (tyre) or of coarse thread.

gos-e kār - hand trowel.

Hāji - title give to person who has made the pilgrimage to Mecca.

hammām - bath.

hammāmi - bath-keeper.

haqq-e risheh - right acquired in the soil by cultivating it (risheh - root).

hayāt - walled compound or yard.

jarib - measure of area, varying in size. In Nahāvand it is usually reckoned at 1,000 square metres (see further Lambton, A.K.S., page 405-409, 1953).

joft - yoke of oxen, ploughland.

ju, jub - irrigation channel.

kadkhodā - village headman.

kām - sieve, for grain.

kārgar - agricultural labourer, who does not own or provide any of the factors of production, other than his own labour, for which he receives a wage in cash or kind.

kartgar (katar) - two-man spade.

kerāyeh - taxi.

khalili - type of grape.

khān - a complimentary title; tribal leader.

khāneh-e ensāf - equity court.

khāneh-e farhang-e rustā'i - rural cultural centre.

kharmankub - animal-drawn threshing machine.

kharmankub-e māshini - mechanical thresher.

kharvār - 300 kilos.

khordeh mālek - peasant proprietor.

khoresht - stew.

khoshneshin - inhabitant of a village who is neither a landowner nor a share-cropper.

kiseh - 50 kilos.

kolang - pick.

korsi - low table covered by a quilt placed over a charcoal brazier used for heating in winter.

kud - manure.

kuh - mountain.

lehāf - quilt.

lori - a Persian dialect, largely incomprehensible to modern Persian speakers.

lubiā-ye sefid (germez, chitti, soratti, māshak, polo, cheshm-e bolboli) - various types of pulses grown in Olyā.

majlis - National Consultative Assembly.

mālek - landowner.

mirāb - official in charge of the distribution of water for irrigation.

mohandes - title given for academic qualification.

mollā - see ākhund.

moshā' - jointly owned in undivided shares (of land).

naft - kerosene.

namāyandeh - landlord's representative.

nasaq - division of the village lands into ploughlands.

nesf(i) - used of a crop-sharing agreement under which the produce is divided equally between the two parties.

nokhod - chick-peas.

now ruz - new year.

olyā - upper.

ostān - province.

pā'in - lower.

qahvehkhāneh - tea house.

qanāt - underground irrigation channel made by excavation (see Beaumont, P. "Qanāt systems in Irān", (1971).

qeichi - secateurs.

qeshlāq - winter quarters.

ra'iyyat - a peasant.

rāji - see tabrizi.

riāl - unit of currency in Irān.

sahrā - open fields of a village.

sampāsh-e dasti - hand sprayer.

sepāh-e dānesh - literacy corps.

sepāh-e tarvij va ābādāni - agricultural extension corps.

shāh - king.

shahr - town.

shahrak-e rustā'i - rural township.

shahrestān - district.

sha'ir - some villages are divided into 96 sha'irs; one-sixteenth of a dāng.

sherkat-e omrān-e gharb - western development authority.

sherkat-e ta'āvoni-e rustā'i - rural co-operative society.

sherkat-e ta'āvoni-e towlid - farm production co-operative.

sherkat-e zerā'i - farm corporation.

Shi'ism - Shi'i sect of Islam.

soflā - lower.

tabrizi - poplar tree.

tapāleh - dung brick.

tappeh - hill.

tur - net for wheat.

vaqf (pl. ouqāf) - land immobilised for some purpose, usually religious or charitable.

vaqf-e khāss - private or family vaqf.

vezārat - ministry.

yāguti - type of grape.

yeilāq - summer quarters for grazing.

REVIEW OF THE LITERATURE

The considerable agrarian changes that have taken place in the rural districts of Irān over the last decade have received only limited attention. What literature is available can be placed in certain broadly defined categories. First are the general works which examine land reform and agrarian changes countrywide. Lambton (1969a), who travelled widely in rural Irān during the sixties, has provided a comprehensive assessment of the emancipation of the peasantry with detailed local examples to support her conclusions. The more recent account by Denman (1973) lacks critical evaluation of the changes and the acknowledgement of the very varied agricultural conditions in the many diverse parts of Irān. Other more concise accounts by the United Nations (1966), Op't Land (1966), Bowen-Jones (1968), Keddie (1968 &1972), McLachlan (1968), Khatibi (1972), Field (1972), Kaneda (1973) and Planck (1975) have added by their insight to our understanding of agrarian change. A number of these authors, notably Lambton (1969a), Kaneda (1973) and McLachlan (1974), have drawn attention to the countrywide loss of confidence and fall in capital investment amongst both peasant proprietors and landlords of small commercial farms as a result of government land acquisition for large-scale agribusiness and farm corporations in the last few years. Moreover, they suggest that these large-scale agricultural units, which are displacing the traditional cultivators, have not so far lived up to expectations in terms of increased production. Professor Lambton feels that it is of profound importance that the government should give practical reaffirmation to the original aims of the land reform law of 1962 and regain the full confidence of both peasant proprietors and former landlords alike or there can be no rise in production over the country as a whole, for it is they after all who own the largest area of agricultural land.

Secondly, there are detailed studies of individual villages as case studies by Planck (1962), Alberts (1963), Miller (1964), Ono (1967), Ajami (1969), Boyce (1969),Okazaki (1969), Djirsarai (1970) and Ehlers (1973) from which a considerable amount of supplementary information is to be gleaned. However, they aim more at description of present circumstances than analysis of change.

Thirdly, there is the literature concerning social or general agricultural developments on a regional level, but again it tends to be descriptive and limited in scope. Perhaps the most important contribution has been made by the Institute of Social Research of Tehrān University, which has a considerable collection of monographs in Persian. This material has not been made use of in this work. Summaries of the institute's reports are frequently published in the Persian language journal Tahqiqāt-e Eqtesādi, and have been referred to. Similarly the Ministry of Co-operation and Rural Affairs' Research Department has carried out some useful survey work, often in conjunction with Tehrān University, for example in Sanandaj and Birjand (1971). Other regional studies of value include those of Gharatchehdaghi in Varāmin (1967), Okazaki in Gorgān (1968), Eybergen in Dusaj (1970?), Connell (1970?), Ehlers (1971) and Gigon (1974).

Finally, there are a number of publications, often with limited circulation, dealing with specific sectors of the rural economy, such as Beddoes' study of the co-operative marketing of agricultural produce in the Caspian Sea provinces (1972), Lawley's investigation of the Nahāvand irrigation scheme (1963) and Tahal consultant engineers' agricultural development investigations of the Qazvin plain (1966), which may be of great value as groundwork material.

Overall, therefore, it must be concluded that what limited attention has been paid to agrarian change in Irān has largely failed

to examine the changing position of the rural population, whether land-holding or "landless", in particular since the effects of the third stage of land reform in 1968 began to take effect.

The lack of detailed studies may be accounted for by the paucity and unreliability of existing data to assist evaluation. Census information is available for 1956, 1960 and 1966, but its accuracy and coverage is limited and for individual village household studies it is of little help. An agricultural census is presently being undertaken, 1973-75, but again it is a sample survey and will only yield information relevant on a regional level. Furthermore, no strict cadastral survey as yet exists; in so far as land is registered, registration merely states in very general terms the limits of the property concerned. Similarly, local environmental conditions remain little studied, and generalisations from scarce data in consultants' reports are often widely misleading (see Chapter 2).

For this study, existing data at the village level was viewed with reserve and was tested wherever possible. Greater emphasis was instead put on personal data collection over two consecutive crop years with a sample of land-owning households in the eleven villages (see Appendix 1). Much importance was likewise placed on mapwork, where the accuracy of air photographs, notably a mosaic taken in 1966, was found to be indispensable. Only painstaking fieldwork, even then, could ensure reliable data. Quick results are not possible in a village locality, where awkward questions elicit a negative and generally inaccurate response and suspicion of outsiders makes research work difficult.

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